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Forgiveness: How it Manifests in our Health, Well-being, and Longevity

Abstract

Forgiveness is a character strength and process that, when practiced, is associated with improved psychological well-being, physical health outcomes, and longevity. Forgiveness can serve as a protective factor that buffers against poor health and psychological consequences. Common misconceptions about forgiveness can serve as barriers to the desire to cultivate this protective strength, as forgiveness is often conflated with permissiveness, and perceived as permission for a transgressor to engage in hurtful conduct. The benefits of forgiveness, however, are most significant for the individual who has been transgressed, rather than the transgressor. Failing to forgive, or unforgiveness, is the practice of engaging in ruminative thoughts of anger, vengeance, hate, and resentment that have unproductive outcomes for the ruminator, such as increased anxiety, depression, elevated blood pressure, vascular resistance, decreased immune response, and worse outcomes in coronary artery disease. Practicing forgiveness enables the transgressed individual to reduce their engagement in rumination thus reducing their experience of anger, resentment, and hate. Forgiveness, then, is a pathway to psychological well-being and health outcomes.

Keywords

forgiveness, positive psychology, health, well-being, choice, longevity, positive medicine, rumination, unforgiveness

Disciplines

Alternative and Complementary Medicine | Clinical and Medical Social Work | Cognitive Behavioral Therapy | Immunology and Infectious Disease | Medical Humanities | Medical Immunology | Medical Sciences | Other Medical Specialties | Other Medicine and Health Sciences | Other Mental and Social Health | Other Social and Behavioral Sciences | Preventive Medicine | Social Work

Forgiveness: How it manifests in our health, well-being, and longevity

Kathi L. Norman

University of Pennsylvania

A Capstone Project Submitted

In Partial Fulfillment of the Requirements for the Degree of

Master of Applied Positive Psychology

Advisor: Leona Brandwene

August 1, 2017

Forgiveness: How it manifests in our health, well-being and longevity

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Capstone Project

Master of Applied Positive Psychology

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Abstract

Forgiveness is a character strength and process that, when practiced, is associated with improved psychological well-being, physical health outcomes, and longevity. Forgiveness can serve as a protective factor that buffers against poor health and psychological consequences. Common misconceptions about forgiveness can serve as barriers to the desire to cultivate this protective strength, as forgiveness is often conflated with permissiveness, and perceived as permission for a transgressor to engage in hurtful conduct. The benefits of forgiveness, however, are most significant for the individual who has been transgressed, rather than the transgressor. Failing to forgive, or unforgiveness, is the practice of engaging in ruminative thoughts of anger, vengeance, hate, and resentment that have unproductive outcomes for the ruminator, such as increased anxiety, depression, elevated blood pressure, vascular resistance, decreased immune response, and worse outcomes in coronary artery disease. Practicing forgiveness enables the transgressed individual to reduce their engagement in rumination thus reducing their experience of anger, resentment, and hate. Forgiveness, then, is a pathway to psychological well-being and health outcomes.

Keywords: Forgiveness, psychological well-being, physical health, longevity, choice

Disciplines: Positive Psychology| Counseling |Medical Humanities| Social Science

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To lick your wounds, to smack you lips over grievances long past, to roll over your tongue the prospect of bitter confrontations still to come, to savor to the last toothsome morsel both the pain you are given and the pain you are giving back----in many ways it is a feast fit for a king.

The chief drawback is what you are wolfing down is yourself.

The skeleton at the feast is you. (Buechner, 1993, p. 2)

Introduction

Sammy Rangel is an ex-con (Rangel, n.d.; Rangel, 2011). For years when he was growing up, Sammy was repeatedly and brutally abused and neglected in unimaginable ways by his mother, sexually abused repeatedly by his uncle throughout his childhood, and was invisible in a system that failed to protect him. Sammy left home forever at 11 years of age (S. Rangel, personal communication, June 15, 2017); his survival facilitated by a life of crime. He recalls that he turned off empathy, or feeling what others feel (Bloom, 2014), in order to protect himself emotionally, noting that he had realized that empathy was not “conducive to survival” (S. Rangel, personal communication, June 15, 2017). During imprisonment, Sammy was reluctantly placed in a peer counseling session. A psychodrama therapy called “empty chair” facilitated a personal epiphany, when he was asked to speak as if he were speaking to his mother. Sammy is still trying to find words for the transformation he experienced, but he knows in that “empty chair” moment, he once again felt empathy for his mother and for others, and it enabled him to eventually pursue a pathway of forgiveness. Today, Sammy has earned a Master’s degree in social work and now has patients he serves. He has written a book, gives speeches about emotions and abuse, and facilitates group training. He has children and is currently working on a doctorate in industrial and organizational psychology.

While Sammy had an “aha” moment that enabled his pursuit of forgiveness, others do not. Ruth Ann was a coworker of mine in the emergency department that I have worked in for years. She frequently was complaining of headaches, back pain, and often accessed medical care for viruses that kept her out of work. One day I happened to mention my research into the topic of forgiveness. Ruth Ann was intrigued, became teary-eyed, and asked to talk about forgiveness. She related a story about how her parents had divorced, and her father married a woman that caused the family a lot of pain and suffering. Ruth Ann even explained she was so angry that she wanted “to kill” this woman. We talked about forgiveness, and I mentioned some common ideas and treatments. The work day began and I have not seen or heard any more about her path to forgiveness and healing, although Ruth Ann still gets headaches regularly and cultivates her anger against her father’s new wife and her family situation. The readiness to forgive is personal, dependent upon the individual, the perceived severity of the transgression, and more, and even psychologists disagree about when it is appropriate to forgive (Lyubomirsky, 2008). People experience a range of transgressions, sometimes daily, and over a lifetime. It has been estimated that nearly 90% of people experience a severe trauma at least once in their lives (Kilpatrick et al., 2013). A certain amount of reflection on transgressions is a natural human response; but sometimes, people ruminate, replaying these transgressions repeatedly over time, and this rumination can lead to distress, emotional harm, and psychological disorders (Lyubomirsky, 2008; Johnson, 2015). Forgiveness is a way to eliminate these ruminative tendencies, allowing one to more appropriately process distressful thoughts and uncomfortable feelings. When we forgive, we allow ourselves to move forward by decreasing our suffering and healing emotionally and physically. We no longer give our time and energy to vengefulness, anger, and hurt, opening up time and energy for more pleasant options.

As we see in Sammy's story, the transgressions we experience are uniquely personal, and as a result, the experience of forgiveness is a personal one, too. Research shows us that forgiveness is a response that is deeply rooted in our cultural, cognitive and religious beliefs and practices. Why should we forgive? In this paper, we will explore the benefits of forgiveness for the transgressed. It may be surprising that forgiveness is a skill we can hone (Nussbaum, 2016). Forgiveness can relieve mental and emotional anguish, and lead to personal change and restoration. For individuals who feel trapped in the rumination about perceived or real transgressions, forgiveness can offer a hopeful pathway out of the suffering created by that rumination. When forgiveness is fully manifested, individuals become more open-minded, are able to heal from trauma, and re-engage in life and love again (International Forgiveness, n.d.). Sammy Rangel notes in the closing of his TEDx talk:

What I have learned, is although the details of our lives may be different, the underlying process of getting stuck, or suffering in our parts of life is the same for all of us. We do not have to be victims of our experiences or in the way we tell our stories. But interestingly enough, stories are the only way out, and it is us [*sic*] who creates those stories. We hold the power to change our stories. And what they represent. I invite all of you to consider, if it would serve you well, to create the new story and the new path and to please remember that the things that held you down will one day hold you up. (Rangel, n.d., minute 19:48)

A review of the literature reveals that psychological and physiological processes may be improved or mitigated through the practice of forgiveness. Some of the physical and psychological states or processes that forgiveness has been shown to impact include HIV/AIDS, fibromyalgia, coronary artery disease, chronic pain, traumatic brain injury, terminal illness,

certain cancers, anxiety, and depression (May, Sanchez-Gonzalez, Hawkins, Batchelor, & Fincham, 2014; Hebl & Enright, 1993; Ironson et al., 2005).

Origins of Forgiveness

Forgiveness has strong philosophical and religious roots, even though forgiveness is not solely a religious virtue. Forgiveness lends an understanding to what it means to live in harmony with others as it provides a moral compass (Peterson & Seligman, 2004).

Konstad (2010) proposes that forgiveness did not exist in antiquity. He explains that early Greeks and Romans managed their anger and vengeance with strategies that differ from modern forgiveness. For example, Aristotle identified calmness as the emotion that was opposite to anger, and was willing to appease another's anger entirely on relations of status and power. In his view, payback could be efficacious if there was a down-ranking. Offering over anger to the transgressor who would humble themselves would demonstrate that the transgressor was inferior and below the transgressed (Nussbaum, 2016).

Konstad (2010) felt forgiveness, as we understand it in modern times, emerged in the late seventeenth century, as seen in the production *The Ruses of Scapin* by Moliere: Geronte, who had been lied to by Scapin, willingly and unconditionally pardons him (as cited in Konstad, 2010). Konstad believes this is an earmark of authentic forgiveness, where a contrite wrongdoer professes pain at harming another, requests sincere forgiveness, and not merely removal of the penalty.

In history, human nature, as seen through the lenses of evolutionary biology, moral philosophy, and theology, holds the capacity for good and evil, help and harm, offense or retaliation, and forgiving or reconciling (McCullough, Root, Tabak, & Van Oyen Witvliet, 2011). Humans seem to have an innate tendency to reciprocate a negative relational behavior

with even more negative behavior (McCullough & Van Oyen Witvliet, 2002). At some level, most people are driven to varying degrees to avoid or seek revenge toward the transgressor.

This predisposition to seek vengeance or retribution is deep-rooted in the biological, psychological, and cultural aspects of human nature (McCullough et al., 2011). Adaptive elements of vengefulness, or revenge, are deterrent from future harm, to promote cooperation, and the restoration of the avengers' self-worth and power (Schumann & Ross, 2010). On the other hand, vengeance may lead to increases in depression and anxiety reducing the avenger's life satisfaction. Nevertheless, revenge is rarely viewed as being just (McCullough et al., 2011; Schumann & Ross, 2010).

Forgiveness has two periods in the history of psychological sciences (McCullough et al., 2000). From 1932 to 1980, psychologists and mental health professionals generally explored how the capacity to forgive was a milestone in the development of moral judgement. They tried to describe the affective nature of interpersonal forgiveness. Pastoral counselors and mental health professionals with a religious persuasion helped to articulate how forgiveness could play a role in achieving mental health. Pathological guilt was thought to be experienced by individuals who had sinned or who had not forgiven others; forgiveness from God was necessary to relieve that pathological guilt (which was thought to have a direct relationship with psychopathology) (McCullough et al., 2000).

It was during this time that Emerson reported results of a forgiveness study that was designed to examine associations between forgiveness and psychological well-being (as cited in McCullough et al., 2000). His study is considered to be the first scientific inquiry between forgiveness and well-being. In a powerful message in his book, *The Dynamics of Forgiveness*,

Emerson recognized a theoretical shift in the Roman Catholic moral theology in terms of the law:

By the power of the Spirit, that break has been made in the past. The reality of the dynamics of forgiveness shows that it can be done again. As pastors, we must help our churches discover how, or our churches will be dead. As Christians, theology will begin from that forgiveness which is the heart of the gospel, or the Christian faith will be irrelevant to the crisis of this age. That irrelevance will say nothing about the faith as it is, but it will say much of the betrayal by us who claim to be of that faith. (Emerson, 1964, p. 26)

Emerson, even in 1946, described forgiveness as an experience (Emerson, 1964). The book was written to demonstrate the place of forgiveness in theological thought and in making the parish relevant. The book attempts to provide evidence for forgiveness in personal health, theological thought and parish life.

Heider (1958) writes about attributes that promote the quest for revenge after an interpersonal transgression. The author explains how forgiveness is forgoing a vengeful behavior, and that this a direct expression of the victim's self-worth and an attempt to honor their ethical standard. Heider quotes Oscar Wilde's injunction, "Always forgive your enemies: nothing annoys them so much (Heider, 1958, p. 269)." He goes on to say that practicing forgiveness is an effective way of creating a desired cognitive change. Nevertheless, his significant work in the field of social psychology was not enough to stimulate further interest.

The construct of forgiveness also began to emerge in psychometric tools. The Rokeach Value Survey (as cited in McCullough et al., 2000) incorporated forgiveness as one among eighteen instrumental values. The instrument was used in a vast number of studies, yielding a

rich data source that could be further explored to assess the differences in how various groups value forgiveness and the value of being forgiving in wider systems of human values. The professional literature thus far was quite scattered and piecemeal.

A second period from 1980 to 2000 presented intensive and serious ideas in concepts of forgiveness, with more research and emphasis in mental health and mental health treatment (McCullough et al., 2000). A major event in forgiveness research during this time, the John Templeton Foundation requested proposals for forgiveness research, and granted funding to 30 research laboratories. Developmental specialists were taking a closer look at reasoning into forgiveness (McCullough et al., 2000). They explored theoretically and empirically how the capacity to forgive manifested across the lifespan. Mental health and mental health treatment in relation to forgiveness became speculative and focused, as practitioners became open to the use of forgiveness in clinical settings. Scientific journals reviewed empirical data encouraging the use of forgiveness in counseling and psychotherapy. Forgiveness seemed to be conceptually popular, and research and attention was on the rise (McCullough et al., 2000). Forgiveness has been referred to as a forgotten art and is vital to psychological and emotional stability in communities, individuals and groups (Musekura, 2010). There is now strong evidence that forgiveness is important to the well-being of individuals and societies.

Forgiveness defined

Forgiveness is the economy of the heart ... forgiveness saves the expense of anger, the cost of hatred, the waste of spirits. Hannah More (IZQuotes, n.d.)

Forgiveness has been defined and explained in many ways. In 1964, Emerson wrote that the meaning of forgiveness would, in each generation, evolve in response to shifting cultural values. He suggested one might find it to mean peace, another the absence of fear, and to yet

another, life (as opposed to death). The author goes on to say that in the bible, in Hebrew, forgiveness is characterized as having a weight lifted, yet the biblical experience of forgiveness is mostly related to strength (Emerson, 1964, p. 75). One explanation is that forgiveness is a prosocial change that occurs in an individual that has been transgressed or offended by a relationship partner (McCullough, Pargament, & Thoresen, 2000). As one forgives, their motivations and actions toward the transgressor change and become more positive, reflecting benevolence, kindness and generosity, and become less negative, reflecting less vengefulness and avoidance (Peterson & Seligman, 2004). Forgiveness might be thought of as a physiological response via change with regard to a transgressor and a transgression. It might be considered a form of mercy that reflects kindness, compassion and leniency toward the transgressor.

Forgiveness involves three elements: a hurt victim, a perceived transgression, and a transgressor (L. Toussaint, personal communication, June 6, 2017). Forgiveness of others occurs when we believe we have been wronged, therefore frequently involves hostility, anger and vengefulness. Forgiveness of oneself is when we believe we have offended, and therefore frequently involves shame, guilt and self-recrimination. Forgiveness has quadrupled in research since 1997 (Worthington & Scherer, 2004).

Forgiveness is an emotion-focused coping strategy, and one of several ways that one may reduce unforgiveness and mitigate the negative emotions of unforgiveness. Therefore, forgiveness may be used as an emotion-focused coping strategy to decrease the stressful response to a transgression.

In defining forgiveness, it is useful to establish what forgiveness is not. Forgiveness is not a pardon, excuse, forgetting, denial or condonation (Coyle & Enright, 1997; Nussbaum, 2016). Worthington and Scherer (2004) note that forgiveness is complex, describing two types

of forgiveness. “Emotional forgiveness” is rooted in emotions and affect motivation, and involves emotional experiences. “Decisional forgiveness” is behavioral, wherein one seeks to behave toward a transgressor as they did before the transgression occurred, releasing the transgressor from the debt (Worthington & Scherer, 2004).

Six important concepts in forgiveness research recur. First, is the concept of agency: forgiveness is a choice made by the individual who was transgressed. To get to this choice is a personal matter that does not have a specific timeframe, but individuals can prolong the hurt they experience by sustaining rumination and unforgiveness (Worthington & Scherer, 2004). Second, in unforgiveness, the rumination that characterizes this state necessarily pushes out time and energy spent on other aspects of life that contribute to well-being, such as the joys of close relationships, meaningful work, and other aspects of well-being that may not be fully expressed. Our future becomes a regurgitation of past experiences (Lyubomirsky, 2008). Third, forgiveness is for anyone who perceives they have been transgressed (Enright, 2001). It is not for the transgressor. That is the most frequent mistake that prevents an individual from forgiving. Fourth, forgiveness is a process that is easier when one demonstrates high trait forgiveness (TF), but through the models and steps of the leading researchers, one may be able to move through the process forgiveness, and this experience can increase trait forgiveness (Peterson & Seligman, 2004; Worthington & Scherer, 2004). Fifth, unforgiveness destroys our physical health and psychological well-being. It shows up in many health-related complaints and can be a cause of ill health and psychological ailment (Toussaint, Owen, & Cheadle, 2012). Finally, and critically, when we find ourselves stuck in a condition where we must have a relationship of any sort with someone we feel has transgressed us, forgiveness is even more important, as it enables the individual to remain psychologically stable. One may not be able to

fully forgive in this situation of continued transgression, but one may be able to remain psychologically steady and strong (Enright, 2001).

The Opposite of Forgiveness: Unforgiveness

Unforgiveness is not just the absence of forgiving; it is a complex combination of delayed negative emotions (Worthington & Scherer, 2004). Research suggests that people experience unforgiveness after they experience an interpersonal transgression. Not everyone will experience unforgiveness when transgressed; those who ruminate angrily likely will develop unforgiveness (Worthington & Scherer, 2004).

The complex, delayed negative emotions of unforgiveness can create a stress reaction and sustain delayed negative emotions such as resentment, bitterness, hostility, hatred, anger, and fear toward a transgressor (Harris & Thorensen, 2005). Because unforgiveness is considered a stress response, it therefore bears consequences to one's health.

The role of "payback," (retribution or revenge) is misunderstood, and assumes that the suffering of a wrongdoer somehow restores what has been wronged (Nussbaum, 2016). This derives from a deep-rooted idea of cosmic balance characterized in many Eastern spiritual traditions as karma, although karma is not the responsibility of the individual who was transgressed. Payback serves as a way for the transgressed to regain a sense of control. Nussbaum contends that anger can sometimes be instrumental (Nussbaum, 2016, p. 6), noting the three instrumental uses of anger:

- 1) Anger is necessary to the protection of dignity and self-respect.
- 2) Anger at wrongdoing is essential to taking the wrongdoer seriously.
- 3) Anger is an essential part of combatting injustice.

Anger and hostility shows up in our health (Silton, Flannelly, & Lutjen, 2013). The researchers looked at the relationships between age, forgiveness, hostility and subjective health with a sample of 1,629 self-selected adults. They found that as we age our health declines due to the aging process and this process may be mitigated through forgiveness. They speculated the findings showed that forgiveness could moderate health benefits. As we age and acquire wisdom, forgiveness tends to increase. The Type A personality, a cluster of behaviors with two critical components of time pressure and easily aroused hostility, is associated with coronary artery disease. In a meta-analysis of 25 studies, hostility, anger and coronary heart disease were suggested to be associated (Chida & Steptoe, 2009). The authors suggest that a multidisciplinary approach that includes strategies that address anger and hostility be taken in the prevention and treatment of coronary heart disease.

Worthington and Sherer (2004) hypothesized that unforgiveness would produce ill health, and forgiveness would reduce the loss of health. They provided four theoretical propositions with evidence in how they relate to health, unforgiveness and emotional forgiveness. The first proposition was that unforgiveness is stressful, and can lead to physical changes, much like a stress reaction. For example, activity in certain brain structures that are related to stress and negative emotions are the same as the activity seen with unforgiveness. Pietrini Guazzelli, Basso, Jaffe, & Grafman, 2000) used positron emission tomography (PET) scans with participants who imagined scenarios of anger and neutrality. The scans revealed that activity during anger decreased the cognitive activity in the ventromedial prefrontal cortex, while limbic system activity increased (Worthington & Scherer, 2004; Pietrini et al., 2000). They suggest that “the human orbitofrontal cortex plays a crucial role in the modulation of the expression of social and emotional behavior” (Pietrini et al., 2000, p. 1776).

Hormonal patterns such as glucocorticoid secretion (a corticosteroid produced in the adrenal cortex involved in metabolism and anti-inflammatory effects) in unforgiveness are consistent with the hormonal patterns of negative emotions associated with stress (Berry & Worthington, 2001; Worthington & Scherer, 2004). In a study by Berry and Worthington (2004), 39 participants were classified whether they were in a happy or an unhappy relationship. Baseline cortisol levels were measured, then the participants were asked to imagine their relationship; those in unhappy relationships had higher cortisol levels.

The second proposition they noted is that there were many ways to reduce unforgiveness, including the value of an apology (Worthington & Scherer, 2004). They studied persons that heard an apology, received restitution, or were informed of criminal convictions. All of these conditions produced forgiveness and diminishing unforgiveness.

Third, the researchers evaluated reductions in the stress of unforgiveness by using emotional forgiveness. One may grant forgiveness and hold good intentions of never seeking revenge (decisional forgiveness), yet one may remain hateful, bitter, angry and fearful toward the offender (emotional (un)forgiveness) (Worthington & Scherer, 2004). No research measuring the relationship between emotional forgiveness and decisional forgiveness exists.

Witvliet and colleagues (2001) investigated 70 participants to evaluate the immediate emotional and physiological effects that occur when practicing rehearsed hurtful memories and nursing grudges, versus those effects that occur when cultivating empathic responses and forgiveness toward actual offenders. Extensive literature has supported that physiological responses are deeply connected to emotional experiences, memories, and imagined responses (Witvliet et al., 2001). Each participant identified a person they blamed for a mistreatment, offence or hurt. They completed a questionnaire about the nature of the offense and their

responses to it. The imagery phase then began, and the participants actively imagined unforgiving and forgiving the offender eight times systematically. Physiology was monitored throughout the trials, measuring immediate psychophysiological effects of the unforgiving and forgiving responses. The participants then rated their feelings during the preceding imagery. Participants also rated the level of empathy and how much they felt they had forgiven the transgressor during the imagery. Heart rate, blood pressure and facial electromyography (EMG), or the muscles reaction to a nerve stimulus, and skin conduction levels (SCL) were evaluated. Greater heart rate, blood pressure, EMG reactivity, and SCL elevation occurred in the unforgiving imagery. The researchers suggest that when enacting forgiving responses, the physiological demands of unforgiveness are reduced. This condition was replicated later by Lawler et al. (2003), studying the psychophysiological correlates of forgiveness in response to interpersonal conflict. The researchers found that state forgiveness was related to lower blood pressure and heart rate (Lawler et al., 2005).

Finally, forgiveness was used as a coping mechanism and related to health outcomes (Worthington & Scherer, 2004). It was hypothesized that it would take years for negative health outcomes from the manifestation of negative emotions to show up (Sapolsky, 2004). If there were no negative health symptoms after years of unforgiveness, it was speculated that the transgressed individual used alternative ways to reduce unforgiveness, such as relinquishing the judgment to God, accepting the offence philosophically, or giving the event another story (Worthington & Scherer, 2004). In other research, Toussaint et al. (2001), along with several other investigators studied TF and health at different ages. They found that middle-aged people forgive more than young adults and feel more forgiveness in general from God.

Rumination

The mind is its own place, and in itself

Can make a heav'n of hell, a hell of heav'n

John Milton

Rumination is a critical aspect of unforgiveness, and might be thought of as the opposite of positive emotions (Bergland, 2015). When something bad happens, for example an argument or missing out on a promotion, it is easy for our busy minds to go over it again and again. Scientists refer to this thinking as rumination (Nolen-Hoeksema, 2000; Fredrickson, 2009). This type of thinking causes negative emotions, and may get one stuck in a rut of questions, quickly getting overwhelmed and even demoralized. The individual's well-intentioned desire to "think this through" does not always result in progress toward resolution. When we ruminate, science has shown us that we use a negative lens to rework the situation (Fredrickson, 2011). In other words, we dig up thoughts that are negative and link them to the event, creating a line of negative thinking. Negative emotions and negative thinking result in a narrow evaluative lens, and get in the way of thinking clearly about the situation (Fredrickson, 2009).

Rumination has contributed to the understanding of depression (Smith, 2009), and has been implicated as a crucial component in studying cognitive weaknesses that make one susceptible to depression. Rumination is repetitively focusing on the negative in one's life (Barber, Maltby, & Macaskill, 2005). It has been seen to foster aggression as a response to perceived transgression, resulting in psychological distress being sustained for longer periods. It has been suggested that anger rumination can be measured (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008).

In the past two decades, the study of rumination has evolved and suggests that rumination is a critical construct in the development of a depressed mood (Smith, 2009). There have been hundreds of articles defining the role of rumination, and there has been consistency in its role in the thought processes that precede and sustain depression. Multiple models of rumination such as Nolen-Hoeksema's (1991) Response Styles Theory (RST), The Stress-Reactive model of rumination, post-event rumination, and the Goal Progress Theory all offer different and unique ways of viewing rumination, and may be used as guides in studying this multifaceted construct (Smith & Alloy, 2009).

Nolen-Hoeksema (2000) examined the role rumination had in depressed disorders and mixed anxiety/depressive symptoms (as cited in Carey, 2013). This research linked rumination to behavior disorders, anxiety, and substance abuse. In two studies of rumination responses, depression was found to be predictable (Nolen-Hoeksema, 2000). Rumination seems to contribute to hopelessness about the future and poor thoughts of one's self. In a study to extend this literature, 1,109 participants without major depression were tested and found to have lower ruminative responses than respondents with a major depressive disorder (Nolen-Hoeksema, 2000).

Bergland (2015) describes, via extensive research, that the cycle of rumination can be broken. He proposes that mindfulness or dynamic proprioceptive activities (or purposeful movement with balanced awareness of where one is in space) can interrupt the connection of the default mode network (DMN), a network of brain regions active in daydreaming, reminiscing, task-independent retrospection sometimes called self-referential thought, from the subgenual prefrontal cortex (sgPFC), the area of the brain just behind the nose associated with mood. A prior meta-analysis identified that depressive ruminations emerge when the firing and increased

blood flow to the sgPFC synchronizes with the DNM (Hamilton, Farmer, Fogleman & Gotlib, 2015). Bergland (2015) speculated the clamp of rumination between the DMN and sgPFC might be broken, allowing stream of consciousness thinking.

Self-reflection is the process of focusing on our experiences, thoughts, and feelings (Nolen-Hoeksema, et al., 2008). According to the Response Style Theory (RST), rumination promotes and worsens depression by supporting negative thinking, impairing problem solving, and interfering with appropriate behavior, leading to an erosion of social support. The authors provided a means to overcome rumination. Interventions proposed to overcome rumination consisted of positive distractions to improve depressed moods and the quality of thinking, and problem solving (Nolen-Hoeksema et al., 2008). It was proposed that in the short term, as a strategy when caught in ruminative thinking, one would engage in neutral or pleasant diversions.

Worthington (2013) refers to rumination as obsessively dwelling on negative thoughts and images that are not good for us. A measure of trait forgiveness (TF) was developed, and rumination was central in preventing people from forgiving. What people ruminated on was attributed to their feelings regarding the transgression. The effect on one's thoughts on one's emotions, then, makes forgiving difficult. One can easily get lost in self-pity and despair. As we'll discuss later in the positive psychology section, rumination focuses attention on the negative. While worry is an adaptive product of survival that is intended to overcome a threat, rumination is a maladaptive extreme of worry. Taking control of thoughts and overcoming troubled thinking is one way out of this ruminative cycle and resultant despair (Worthington, 2013).

One well-studied tool that undermines the ruminative cycle and bolsters resilience is Ellis' model of cognitive behavioral therapy (CBT), (Sudak, 2012; Seligman, 2011; Reivich &

Shatte, 2002). Innovators in CBT discovered that individuals form their own beliefs, and when thoughts do not serve us, then dysfunctional consequences follow. CBT focuses on actively recognizing thoughts and reforming them (O’Kelly & Collard, 2015), and can be a powerful tool in supporting individuals’ experience of the world around them. Faulty beliefs and assumptions, faulty expectations, and faulty cognitive processes fall into the category of troubled thinking (Sudak, 2012; Worthington, 2013). An example of a faulty belief and assumption would be when something happens and we view it as being helpful or unfair. One interprets the event based on one’s beliefs. Faulty expectations can become a problem when one believes the future will turn out in a certain way. When that expectation is not met, disappointment results. Faulty cognitive processes are internal dialogues that originate from cognitive biases, and are characterized by dichotomous reasoning, overgeneralization, jumping to conclusions, exaggeration, catastrophizing, perseverative questioning, discounting progress, and unreasonable self-condemnation. Overcoming rumination requires identifying the type of faulty cognitive process that is responsible for a given situation, and finding a more adaptive response, from solving the problem to focusing on a positive “twist” (Worthington, 2013).

Positive Psychology

What does not kill me makes me stronger

Friedrich Nietzsche

Positive psychology is the scientific study of what contributes to a healthy, flourishing life including positive subjective states, positive individual traits, positive relationships and positive institutions. The field may help people thrive and prevent pathologies that occur when life is bleak and meaningless (Seligman & Csikszentmihalyi, 2000; Park et al., 2014). The spark of modern positive psychology was ignited when Dr. Martin Seligman proposed the new science

of positive psychology in his 1998 speech as president of the American Psychological Association (APA). He asserted that the bar for the human condition had been raised. Positive psychology will have implications in education, business, medicine, economics, the environment, public policy, art and many other disciplines, as it permeates the fabric of society (Seligman, 2011).

The study of positive psychology has roots in virtually all the world's religions (Siegel, 2014). Aristotle, Epicurus, and Socrates were thought to be the first great thinkers who asked if we could be happier and have a meaningful life (McMahon, 2013). The Greeks and ancient philosophers have had different schools of thought in how to find happiness. Aristotle believed that happiness, or eudaimonia, was achieved in knowing your true self and acting in harmony with your virtues. More recently, William James believed we create our happiness by making a choice to participate in life (Pawelski, 2003). James argued that emotions are physiological reactions.

More contemporary thinkers incorporate how well people are functioning along with how they are feeling in their assessments of well-being. Seligman's (2011) well-being theory has five measurable elements that contribute to well-being, are each sought for its own sake or as an end to itself, and can be studied on its own independent of the other elements. These five elements are captured in the acronym PERMA: positive emotions, engagement, relationships, meaning and accomplishment (Seligman, 2001).

The positive emotions, which contribute to positive affect and pleasant experience, are a critical component of well-being. Positive emotions historically received lower priority in research (Fredrickson, 2004; Fredrickson, 2009). Fredrickson (2004) posits that negative emotions over time have a grave influence for people and societies, as reflected by increased

depression, anxiety and hostility. Scientific evidence shows us that positivity can produce success and health, and that positivity has downstream effects (Fredrickson, 2011; Fredrickson, 2004). Lyubomirsky (2008, p. 32), notes the differences in how some individuals are able to remain happy in the throes of adversity, stress and trauma. She describes the role of rumination and what is necessary to overcome this cognitive negative process, and identifying automatic pessimistic thoughts is important.

Our relationships with those around us have a significant influence on our psychological well-being. Research is beginning to reveal that prosocial behavior, or voluntary acts aimed at benefitting others, is linked to our health and longevity (Nelson-Coffey, Fritz, Lyubomirsky, & Cole, 2017; Brown & Brown, 2015). After four weeks of performing prosocial behavior in 159 subjects, immune cell gene expression was impacted, decreasing the conserved transcriptional response to adversity (CTRA) (Lyubomirsky, 2008). CTRA is characterized by up-regulated expression of pro-inflammatory genes and down-regulated expression of Type I interferon- and antibody-related genes (Fredrickson et al., 2015). This suggests that social ties play an important part in our health and longevity; intuitively, this would also suggest that fractures to social ties, such as transgressions and unforgiveness, would have deleterious effects.

Positive Psychology and Forgiveness

A misconception about positive psychology is that we are to always be happy (Kern, 2017), and the study of forgiveness in positive psychology is an example of adaptive responses to life circumstances that are less desirable. Peterson and Seligman (2004), in an effort to define the characteristics of character strength and the expression of human potential, set out with the help of scholars and practitioners to develop a classification of character strengths and virtues and their associated metrics. Six broad categories of virtues remain valued by moral philosophers

and religious thinkers across history; wisdom, courage, humanity, justice, temperance, and transcendence (Peterson & Seligman, 2004, p. 13). They specifically relied on trait theory, that recognizes individual differences are stable but still amenable to change, and are often related to the individual's setting. By creating a classification that could define positive individual traits, their hope was to shed light on positive subjective experiences, and subsequently, theoretical and empirical tools to craft and evaluate positive interventions. A common vocabulary would allow communication across professions and the general public (Peterson & Seligman, 2004). Similar to how the Diagnostic and Statistical Manual of Mental Disorders (DSM) provides classifications for psychological disorders, Seligman and Peterson created a handbook of classifications of "what is right about people" (Peterson & Seligman, 2004, p. 4). In contrast to the DSM that offers a classification of disorders within clinical psychology, psychiatry, and social work, positive psychology offers a language and classification to those traits that make the good life a possibility. Forgiveness was identified as one of these 24-character strengths that enable that good life (Peterson & Seligman, 2004).

Forgiveness is defined as accepting the shortcomings of others by giving them a second chance. Forgiveness is a positive trait within a larger set of traits that comprise the virtue of temperance, which is protective from excess, and can "temper" our behaviors, rather than stopping them entirely (Peterson & Seligman, 2004). Highly forgiving persons can defend themselves during the troubling event, and less frequently display various negative affects such as anger, anxiety, depression and hostility (Berry & Worthington, 2001; Maltby, Macaskill, & Day, 2001; Peterson & Seligman, 2004). They are also inclined to endorse socially suitable and desirable attitudes and behaviors (Glover, 2015). Because of the avoidance of unforgiveness,

which creates a stress response with consequences for health, forgiveness has implications not only for psychological well-being, but physical well-being, too.

Forgiveness in our health

Health is defined as “a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity” (Official Records of WHO, no. 2, p. 100). Empirical research implies that forgiveness is related to health outcomes because it helps to intercede between and reduce physiological responses to the stress reaction (McCullough et al., 2000). Indirect mechanisms are thought to also affect the forgiveness-health connection, such as the presence of social support, relationship quality, and religious implications (Worthington & Scherer, 2004). A few areas of health that have been studied and developed in the forgiveness literature include the effects on the autonomic nervous system, cardiovascular and vascular diseases, the immune system, chronic pain and autoimmune disorders, anxiety and depression, HIV, and longevity.

The autonomic nervous system is intricate in the physiological expression of stress (Porges, 1995). It has the sympathetic “fight or flight” branch, and the parasympathetic “rest and repair” branch. The parasympathetic branch of the vagus nerve participates in the functional control for autonomic regulation. Vagal tone, a measure of heart rate variability that serves as a physiological indicator for resilient responses to stress, has been found to be related to cardiovascular disease, emotional expression, and emotional regulation. Vagal tone is increased by forgiveness, and depressed by unforgiveness (Worthington & Scherer, 2004).

Stress Hormones and Immune Function

Stress is an unavoidable factor in modern living. As part of its mind/body health campaign, the American Psychological Association (APA) in 2007 began an annual survey of

stress in America (Stress in America, n.d.). The 2007 survey revealed 75% of Americans report experiencing stress within the past month; 48% report increasing stress in the past 5 years. By 2017 the annual surveys have demonstrated elevations and reductions in the various areas of stress, with the most recent survey showing elevated stress around personal safety and terrorism. The survey draws attention to the ongoing presence and associated effects (both positive and negative) of stress on our lives, and the serious physical and emotional implications of the mind-body link.

Stress physiology is the study of how one's defenses become mobilized by the body as a response to physical challenges such as being chased by a predator or running after a meal while starving (Sapolsky, 2004). Humans have the ability to activate the same response habitually to psychological or social stressors, such as relationship problems, financial issues, and global warming. While the stress response is critical in running from a predator, it becomes pathogenic when sustained, and many Westernized diseases occur or are worsened by the condition of toxic, unremitting stress over time (Sapolsky, 2004).

Humans are the only species that institutionalizes reconciliation (via government or judicious sanctions) and contends with truth, apology, forgiveness, reparations, amnesty, and forgetting (Sapolsky, 2017). A perceived reprehensible behavior activates the nervous system, and the nervous system can be sensitized to repeat stimuli that are similar, an adaptation of hormones and evolutionary pressures.

The stress response is both a hormonal and neural occurrence typical for vertebrates. A hormone is a chemical messenger that is released by a secretory cell from various glands (Sapolsky, 2017). It mediates homeostasis and adaptation to threats. The two main neuroendocrine pathways that are activated in the stress response and control the immune system

are the hypothalamus-pituitary-adrenal (HPA) axis, leading to the release of glucocorticoids, and the sympathetic nervous system, which releases catecholamines, epinephrine, and norepinephrine as seen in Figure 1.

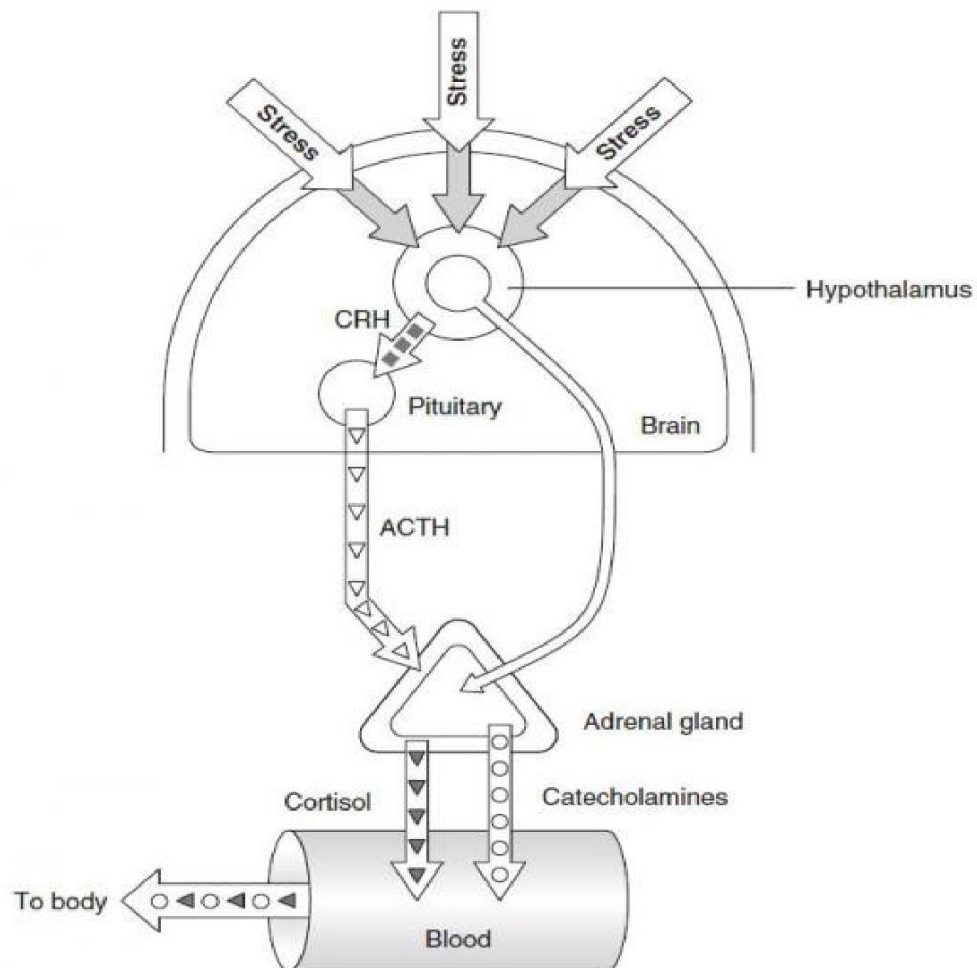


Figure 1. HPA axis. Reprinted from Dartmouth Journal of Undergraduate Science. Retrieved July 27, 2017, from <http://dujs.dartmouth.edu/2011/02/the-physiology-of-stress-cortisol-and-the-hypothalamic-pituitary-adrenal-axis/#.WVrMZ4WcExN>

Sometimes a stressor is the anticipation an upcoming stressful event, and may occur in a physical or psychological form, and may be acute or chronic (Webster Marketon & Glaser, 2008). At the heart of this stress response is a set of endocrine and neural factors, all of which create physiological changes in the body. The hormones adrenaline and noradrenaline are

released into the bloodstream to mediate the “fight or flight” syndrome (Sapolsky, 2004). Stress also mitigates the release of other hormones such as glucocorticoids, or steroids, beta-endorphin, glucagon, prolactin, and vasopressin (Webster Marketon & Glaser, 2008). The stress response inhibits the hormones related to growth and sex. As a rule, these stress responses are adaptive conditions in acute physical crisis, such as dashing across a prairie, as energy is released from storage sites and sent to the exercising muscle, cardiovascular tone becomes enhanced, as does acceleration of nutrient delivery, and those functions that are unessential to survival are suppressed. Digestion, reproduction, growth, tissue repair and immunity are held at bay in the stress response (Sapolsky, 2004). Because these latter functions are suppressed, continued stress often worsens diseases such as diabetes, hypertension, ulcers, amenorrhea and impotence, and suppresses immune function, increasing risk of infectious diseases.

Humans, unlike animals, activate their stress response simply for a psychological or social reason. Chronic activation of the stress response is maladaptive, as it increases the risk for certain diseases by suppressing functions such as tissue repair and immunity (Sapolsky, 2004; Sapolsky, 2004b). Accurately perceiving stressors and sources of coping is important to reduce this physiological response, and individual differences in temperament and personality are factors in understanding the stress response in humans.

Anxiety and Depression

Anxiety disorders are the most prevalent mental disorders (Greening & Mitchell, 2015). As we have seen, rumination is linked to depression, anxiety, and mixed anxiety/depression disorder, behavior disorders, and substance abuse (Nolen-Hoeksema, 2000). Positive distractions or pleasant diversions are ways to break the circle of rumination that contributes to these disorders.

Major scientific discoveries in mental health have been pioneered in forgiveness studies. For those who achieved forgiveness, anxiety and depression, along with improved self-esteem and hope, were improved (Ingersoll-Dayton, Campbell, & Hwa-Ha, 2011).

Reed and Enright (2006) studied women who had been emotionally abused two years after the abuse was over and they had left the abuser. The study used forgiveness therapy (FT) and alternative therapy (AT) (defined as anger validation, assertiveness and interpersonal skill building), to evaluate if there would be any difference in psychological well-being outcomes. Greater improvement in depression, trait anxiety, posttraumatic stress symptoms, self-esteem, forgiveness, and environmental mastery was seen among the FT participants than the AT group. FT was implicated as an effective tool in the recovery of emotionally abused women post relationship. Other psychological benefits of forgiveness were increased feelings of love, improved ability to handle one's anger, and improved capacity to trust and release from the control of others and events in the past (Reed & Enright, 2006).

Chronic pain and fibromyalgia

Forgiveness is currently being assessed with growing interest as an essential tool in coping with chronic pain (Offenbacher, Dezutter, Vallejo, & Toussaint, 2015). Forgiveness in chronic pain involves affective, behavioral, motivational and cognitive components. It has been shown to be inversely related to pain during physical therapy, chronic pain, and low back pain patients. With interpersonal and social stressors having a unique and powerful contribution to chronic pain, forgiveness, used as an emotion-focused coping process, is a useful and productive response (Offenbacher et al., 2015).

Fibromyalgia (FM) is a common and chronic pain disorder that causes hurt with touch across the body (Offenbacher et al., 2015). FM affects one's physical, mental and social lives,

causing pain in muscles, ligaments and tendons. Many who suffer with musculoskeletal pain have depressed moods (Linton et al., 2011). About 10 million Americans are afflicted with FM, with women outnumbering men by a factor of four, and all ages being susceptible. Chronic widespread pain (CWP) and FM are prevalent disorders with numerous symptoms (Offenbacher, et al., 2015). Growing evidence suggests that these disorders are stress-related syndromes, where distress is transformed into pain through sympathetic system rigidity. Anger is the most salient predictive emotion of pain, and may exacerbate it (Offenbacher et al., 2015).

Toussaint and colleagues (2014) studied a comparison of 735 fibromyalgia patients with healthy versus depressive styles. Healthy, depressive, reactive, and low affect are four styles of relative positive affect (PA) and negative affect (NA) levels. As anticipated, a healthy affect balance style was less prevalent in fibromyalgia patients, at about 12%. Those with a depressive affect balance style were about 51.8%, and 4.4 % a reactive affect balance style. This was consistent with the researcher's hypothesis that a depressive affect balance style was more likely to have worse outcomes across the domains of higher levels of pain, stiffness, sleep disturbance and dyscognition, greater fatigue, higher levels of depression and anxiety (Toussaint, Vincent, McAllister, Oh, & Hassett, 2014).

Offenbacher and colleagues (2015) note that emotional regulation is more useful for situations not amenable to change, while problem-focused coping is more effective in changeable situations. The authors suggest an important connection between social stress, coping, and forgiveness. Intrapersonal and interpersonal sources of stress in CWP and FMS may be effectively addressed through forgiveness as seen in Figure 2.

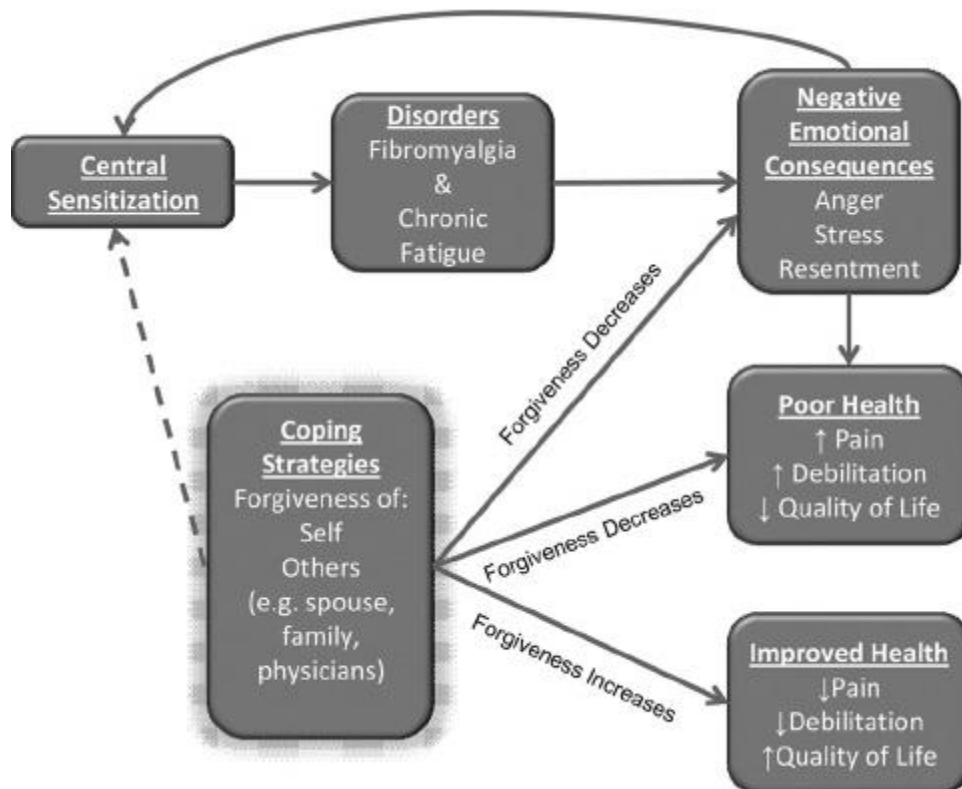


Figure 2. Negative Emotional Consequences of Fibromyalgia. Reprinted from Research Gate, Retrieved July 28, 2017 from https://www.researchgate.net/figure/45289297_fig1_FIGURE-1-Conceptual-model-of-the-negative-emotional-consequences-of-fibromyalgia-and

Forgiveness is a coping mechanism that helps to relieve the most common sources of stress with indirect and direct weight on health, nervous and endocrine function (Offenbacher et al., 2015). The authors listed sources of stress that might be responsive to forgiveness intervention:

- *Childhood adversity*: Emotional, physical, sexual trauma
- *Workplace*: bullying, harassment, discrimination
- *Spouse, family, friends*: Lack of affection and support from others
- *Healthcare stigmatization*: Skepticism from healthcare staff, difficulties with insurance providers, misdiagnosis
- *Over commitment*: Levels of dissatisfaction with oneself, insecurity, and a lack of social recognition

- *Perfectionism*: Dealing with exceedingly high and unreachable expectations for oneself and others
- *Anger*: Anger at: (a) the person responsible for the injury illness, (b) the health care provider, (c) the mental health professional, (d) the legal system, (e) insurance and third party payers, (f) employers, (g) significant others, (h) God, (i) self, and (j) the whole world, *Shame*: Shame and self-blame over interference with activities of daily living resulting from pain; struggles with self-esteem and dignity
- *Social exclusion*; feeling alienated by physicians, health authorities, significant others and friends; feeling unappreciated (Offenbacher et al., 2015, p. 126).

Coping mechanisms in CWP and FMS include emotion regulation, forgiveness, and anger (Offenbacher et al., 2015). Coping mechanisms may be maladaptive, as emotion regulation and anger can make pain intensity worse. In situations that are not likely to change, such as chronic pain, emotion regulation focus becomes important in coping (Keefe, Lumley, Anderson, Lynch, & Carson, 2001). Forgiveness is considered a valuable coping mechanism that is growing in interest in chronic pain and may be complementary to a positive coping process (Offenbacher et al., 2015).

An area of anger that has been growing in attention is angry rumination (repetitive focus on the negative aspects of a transgression) (McCullough, Orsulak, Brandon, & Akers, 2007). Angry rumination has been associated with physical pain. It has been suggested that angry rumination is connected to chronic pain through biological (increased muscle reactivity), behavioral (anger in relationships) and affective (anger leading to depression) pathways. This finding further supports the importance of breaking the ruminative cycle (McCullough et al., 2007).

Forgiveness interventions are potentially helpful in improving forgiveness and overall FM health. If FM symptoms could be associated with anger, resentment, and stress related to childhood abuse and neglect, then reducing anger and stress and forgiving a perpetrator, might result in diminishing the influence on the neurophysiological process of FM (Lee & Enright, 2014). In a study that conducted the first forgiveness intervention on women with FM and childhood abuse such as physical or sexual abuse, emotional or physical neglect, the primary hypothesis was partially supported. Two groups were randomized to either a forgiveness intervention or FM health intervention. In the forgiveness intervention, participants scored higher on the forgiveness final test than the FM health intervention participants. Overall FM health, and state anger relative to the FM health group indicate that the forgiveness intervention was potentially helpful, as noted in improvement of forgiveness and overall FM health, and in decreasing state anger of this sample of women with FM (Lee & Enright, 2014).

Clinical observations suggest those with chronic pain have difficulty in forgiving those they perceive have hurt them in some way (Carson et al., 2005). In a study of 61 adults with chronic lower back pain, Carson et al., (2005) looked at the relationship of varying levels of forgiveness to measures of pain. The Enright Forgiveness Inventory (EFI), (Appendix B), was used to assess the current level of interpersonal forgiveness; Forgiveness Self-Efficacy Scale (FSES), (Appendix E), was used to measure one's self-confidence regarding the ability to forgive; the McGill Pain Questionnaire (MPQ) (Appendix D), was used to assess subjective pain. To measure anger, the State-Trait Expression Inventory II (STAXI-II), a 57-item self-reporting instrument that measures experience and expression of anger was used. For psychological distress measurement, participants rated how much they were bothered by the pain symptom

using the Brief Symptom Inventory (BSI), as it is sensitive to change and is well-documented in reliability and validity.

Two variables were found to be reliably present in the individuals with low back pain: the current level of forgiveness and forgiveness self-efficacy (Carson et al., 2005). The researchers also found that those with chronic low back pain have varying consistency in the scores of the forgiveness variables. Some scored high and some scored low, but forgiveness variables did relate in a meaningful way to measures of vital indices in adjustment to persistent pain, including anger, pain, and psychological distress. Finally, they found anger significantly mediated the relationship between forgiveness and psychological distress, as well as between forgiveness and pain (Carson et al., 2005).

Blood Pressure

High blood pressure, also known as hypertension, is when the force of blood flowing through blood vessels is too high, and causes damage. Left untreated, elevated blood pressure may result in vision loss, stroke, heart attack, sexual dysfunction, kidney disease or failure, and peripheral artery disease (Go et al., 2014; "High Blood Pressure Danger," 2017). About 85 million Americans have high blood pressure. Certain life style choices and traits puts one at risk for developing hypertension.

Conciliatory behaviors may have more impact on individuals who have been transgressed, rather than transgressors. With random assignment, 68 couples discussed a recent marital transgression, and then conciliatory behavior was tested as a predictor of lower blood pressure (Hannon, Finkel, Kumashiro, & Rusbult, 2011). The researchers assessed conciliatory behavior of the victim (offering forgiveness) and the transgressor (making amends) during a 40-minute videotaped discussion of the unresolved transgression. Lower blood pressure was found

in both the transgressed and the transgressor when the transgressed individual enacted conciliatory behaviors. No relationship in blood pressure was noted in either group when the transgressor engaged in conciliatory behavior, suggesting that forgiveness is most important for the one who has been transgressed.

Forgiveness may produce valuable effects directly by reducing the allostatic load (wear and tear on the body) associated with betrayal and conflict, and indirectly through lowering perceived stress. State forgiveness and forgiving personality were studied in 108 college students that had experienced a betrayal from either a parent or friend/partner, state forgiveness and forgiving personality were studied (Lawler et al., 2003). Measures of physiological stress (blood pressure, heart rate, frontalis electromyography (EMG), and skin conductance) were obtained during baseline, interviewing, and recovery. Lower blood pressure and high blood pressure recovery were found to be associated with higher levels of trait forgiveness. State forgiveness was associated with lower blood pressure and heart rate.

Sustained stress over long periods can cause damage to the heart and blood vessels through the elevation of blood pressure. Luskin (2002) describes a study where college students imagined forgiveness to an offender. They were then asked to remember the grudge, while vital signs such as blood pressure, heart rate, and arterial wall pressure were monitored. These parameters increased, and have a negative impact on one's health. If unforgiveness is sustained over long periods, it can cause damage to the heart and blood vessels.

Coronary Artery Disease and Vascular Resistance

About 610,000 people die in America each year from heart disease (Center for Disease Control, n.d.), and close to 750,000 people experience a myocardial infarction, or heart attack, each year. Myocardial perfusion, or the distribution of blood to the heart muscle, is reduced

when recalling anger (Waltman et al., 2008). Research indicates that anger increases the risk of coronary heart disease and the likelihood of a poorer prognosis for those with heart disease (May et al., 2014). The authors suggest that failure to forgive unconditionally has an influence on one's mortality. One possible antidote to attenuate the cardiotoxic effects of anger is through cultivating trait forgiveness (TF).

Three studies were conducted to assess the impact of anger and TF on cardiovascular functioning, and was the first research to systematically look at the impact of TF and anger on cardioprotection and cardiotoxicity (May et al., 2014, p. 51). TF was hypothesized to be a protective factor that helps prevent the development of heart disease. In the first study, heart beat was measured to assess autonomic modulation, or the ability to quickly recover from stressful events, using two measures: sympathetic vagal tone (heart rate variability) and baroreflex functioning (regulation of blood pressure). Anger was associated with physiological variables that indicate an increased cardiovascular and nervous system stress response, while TF was associated with decreased cardiac sympathovagal tone. The second study found the effects of TF to decrease the workload of the heart (reductions in ventricular workload and oxygen consumption). In the third study, anger remained a significant predictor of higher mean blood pressure, higher arterial pressure, and poorer blood pressure recovery from stressful events.

There may be some differences between the act or process of forgiveness and the cultivation of forgiveness as a regular practice over time. Friedburg and colleagues (2007) evaluated the effects of TF on cardiovascular reactivity (CVR), which are physiologic responses to a psychological or physical challenge or stressor, in 99 normotensive (normal blood pressure level) adults. They did not find a significant relationship between forgiveness and CVR. The

researchers did find that a higher level of TF was suggestive of a lower diastolic blood pressure (DBP) at baseline and recovery of the DBP.

In another study, researchers assessed psychological and physiological correlates of forgiveness in participants with coronary artery disease (CAD) (Friedberg, Suchday & Srinivas, 2009). They investigated 85 inpatients with stable or unstable angina pectoris, CAD and acute myocardial infarction (AMI), and focused on TF, as it is positively correlated with life satisfaction, positive affect, and emotion-focused coping. TF is also related to indices of cardiovascular health, for example, serum cholesterol and triglyceride levels. Higher levels of forgiveness were found in those participants lower in levels of anxiety, depression, and stress. The study revealed that forgiveness was associated with lower total cholesterol and higher HDL to LDL ratios that are indicators of cardiac health, however, none of these psychosocial variables were associated with total cholesterol–HDL or LDL–HDL (Friedberg et al., 2009).

Anxiety, depression, neuroticism, stress, anger, and hostility are negatively correlated with TF. Higher levels of TF have been negatively associated with depression and PTSD. Forgiveness interventions have shown positive effects on emotional health in randomized experimental and control groups (Coyle & Enright, 1997; McCullough et al., 2000; Waltman et al., 2008). Compared to the control groups, those who use forgiveness therapy reduce anger, anxiety, and depression and the effects are seen in follow up at three months. Waltman and colleagues (2008) conducted a psychology of forgiveness pilot study on anger-recall, stress-induced changes in myocardial perfusion (blood flow in the arteries of the heart muscle), forgiveness, and related variables. United States veterans qualified for the study if they met criteria for reversible myocardial ischemia of at least one major coronary artery (> 50% blockage), or a left ventricular ejection fraction (a measure of the efficiency with which the heart

pumps blood to the body) of < 40%. The participants identified a specific deep psychological injury that remained unresolved. Seventeen participants demonstrated anger-induced myocardial perfusion defects, and were placed in a randomized psychological intervention program and received interpersonal forgiveness or control therapy sessions. The participants in the forgiveness group demonstrated less anger induced cardiac perfusion defects and increased forgiveness at the end of the 10-week sessions (Waltman et al., 2008).

HIV

HIV/AIDS is a communicable disease that affects the autoimmune system, compromising health and many aspects of life for the person afflicted (Temoshok & Wald, 2005). Research and theory on psychoneuroimmunology and HIV suggests that biological, psychological, and behavioral aspects interact in complex ways to influence quantifiable disease progression. Higher self-esteem and self-respect states are associated with more positive health outcomes, as opposed to guilt, self-hatred, and self-blame, which are associated with negative health outcomes (Glaser, Rabin, Chesney, Cohen, & Natelson, 1999; Temoshok & Wald, 2005).

Studies that reflect psychosocial factors, particularly denial and distress and concealment of sexual identity, demonstrate these factors influence CD4+ T-lymphocyte cell count (cells responsible for immunity with a higher number indicating higher immunity) (Glaser et al., 1999). In a diverse sample of HIV positive participants, the group with a positive view of God as benevolent and forgiving had slower rates of disease progression, measured as preserved CD4 counts and lower viral loads (Ironson et al., 2011).

HIV research aims at improving quality of life and managing chronic illness (Martin, Vosvick, & Riggs, 2012). A sample of 288 participants were assessed using the Lazarus and Folkman's model of stress and coping, a framework which emphasizes appraisal to evaluate

harm, threat and challenges, to look at primary and secondary effects of attachment style (secure, anxious, and avoidant) and forgiveness on physical health levels in HIV + adults. Anxious attachment style was negatively related to physical functioning and pain and has been consistent across literature in supporting negative outcomes of HIV, such as sexual risk-taking and perceived stress. An avoidant attachment style was negatively related to forgiveness of oneself and others, indicating that this population would not be likely to use forgiveness as a coping mechanism. Forgiveness of oneself was associated with better perceived health in those with attachment anxiety, but not in the remainder of the studied population. Forgiveness interventions may be one way to improve quality of life in HIV+ persons (Martin, Vosvick, & Riggs, 2012).

Longevity

Multiple types of forgiveness have been studied as predictors of mortality as well as psychosocial, spiritual and health parameters in forgiveness effects on longevity. In the United States, adults ages 66 and older were assessed in forgiveness, health, religiousness/spirituality, and socio-demographics ($N = 1,232$) (Toussaint, Owen, & Cheadle, 2012). Believing in God's unconditional forgiveness and being willing to offer conditional forgiveness to others were the predictors of mortality. After controlling for religious, socio-demographic, and health behavior variables, willingness to offer conditional forgiveness to others remained a risk factor for mortality. The findings suggest that the conditional forgiveness of others is related to risk for all-cause mortality, and that the mortality risk of conditional forgiveness may be due to its influences on physical health (Toussaint et al., 2012).

Evidence-Based Forgiveness Approaches and Discussion

The study of forgiveness contains central concepts that are essential to its advancement. Key are a well-defined definition of forgiveness and theoretical and psychometric tools (Law, 2009). Even though the definition of forgiveness remains broad, research instruments are being honed. Also, practical methods to implement forgiveness are well developed. Many active researchers in forgiveness show up in the literature. See table 1. for the most prolific researchers regarding forgiveness.

Table 1. Contemporary forgiveness

| Contemporary Forgiveness | | | |
|--------------------------|--|---|--|
| Researcher | Focus | Model | Description |
| Dr. Robert Enright | <ul style="list-style-type: none"> ●Mental and physical benefits: incest survivors, adult children of alcoholics, heart patients, others | <ul style="list-style-type: none"> ●Process Model of Forgiveness ●Four Phases of Forgiveness Enright Forgiveness Inventory (Appendix B) | Uncovering your anger, deciding to forgive, working of forgiveness, discovery and release from emotional prison |
| Dr. Everett Worthington | <ul style="list-style-type: none"> ● Forgiveness and virtues ●Forgiveness and reconciliation ●Marriage and Family ●Religion and Spirituality ●Assessment Scales | ●REACH Model | R: Recall my hurtful acts, E: Emotionally replace unforgiveness with empathy A: Altruistic gift of self-forgiveness, C: Commit to the emotional self-forgiveness H: Hold on to the self-forgiveness |
| Dr. Fred Luskin | <ul style="list-style-type: none"> ●Stanford Forgiveness Project ●Forgiveness in psychological, relational and physical health | ●The 9-steps to Forgiveness (Appendix F) | Know exactly how you feel, make a commitment, find peace, right perspective, stress management, give up expecting things from other's, positive goals, remember a life well lived is your best revenge, amend your grievance story |
| Dr. Loren Toussaint | <ul style="list-style-type: none"> ●Religious and spiritual forgiveness ●Mental and physical health and well-being | <ul style="list-style-type: none"> ● Sierra Leone Forgiveness Project ●Mind, Body, Spirit Lab | Epidemiological, population-based surveys Psychophysiological and neuro-endocrine measures to assess the effects of forgiveness. |

(Enright, 2001; Luskin, 2002; Worthington, 2013; "Biography for Loren Toussaint," 2017)

To forgive, one must make a choice to engage in forgiveness, and that choice should be made when a person feels ready to do so (Enright, 2001; Lyubomirsky, 2008). Forgiveness is an evolving and important area of research in positive psychology (Chaudhary, Chaudhary, & Chaudhary, 2014). It is a tool that can help transcend anger, bitterness and revenge.

Aspects that are common across the multiple models of evidence-based approaches to forgiveness include (a) deciding or choosing to forgive then, (b) committing, (c) recalling the hurt and evaluating how one feels, (d) dealing with the anger, find empathy toward the transgressor, and reflecting in how it is showing up in one's health (Toussaint, Shields, & Slavich, 2016; Enright, 2001; Worthington, 2013; Luskin, 2002). After a review of literature and the existing models, steps and phases of forgiveness, the following are salient steps that I propose are essential in the process of using forgiveness as the instrument of recovery to overcome a transgression and move forward successfully in life.

The leading cause of failure to forgive is the misunderstanding that forgiveness is being permissive, turning the other cheek, or excusing the behavior (Enright, 2001; R. D. Enright, personal communication, April 10, 2017). Comprehension and understanding of what forgiveness is, and what it is not, is a necessary step in moving forward into forgiveness. Forgiveness is a process that benefits the transgressed individual because it offers protective qualities and helps reduce the negative consequences of hostility (Silton et al., 2013). Forgiveness must be distinguished from reconciliation, condoning, or forgetting, and instead serves as a pro-social and emotion-based coping strategy in the process of healing (Davis et al., 2015). But, too much forgiveness would be permissiveness, and this might leave the transgressed individual vulnerable to transgression again. Therefore, permissiveness is the extreme of forgiveness and must be avoided (McNulty, 2011).

Second, agency in the transgressed individual is important. One must decide or choose to forgive then make a commitment early in the recovery process (Coyle & Enright, 1997), and there are many adaptive pathways to making that commitment. In fostering forgiveness, eliminating ruminative thinking becomes easier and easier. Through practicing the process of forgiveness, trait forgiveness may be cultivated and strengthened (Peterson & Seligman, 2004).

Once the transgressed individual has committed to pursuing forgiveness, the mindset and process must be maintained through strategies such as social support, cognitive behavioral therapy, or other therapeutic approaches. The transgressed individual should seek the motivation and agency necessary to maintain forgiveness in service to their own well-being, rather than slip into vengefulness or rumination.

The third step in the process of forgiveness is to entertain the transgressor's personal story (Worthington, 2005). Exploring their reasoning and the contextual factors that led to the transgression are strategies to help the transgressed individual feel empathy toward the transgressor. This should be done cautiously, as exploring empathy is a deeply personal experience and in some cases, can lead to worsening of emotional pain and suffering. It is recommended that the transgressed explore this essential aspect of forgiveness with caution and to a degree that is within the transgressed individual's comfort level. As discussed earlier in this paper, this may be as simple as looking at the transgressor as a human body that pumps blood through vessels, physical aspects common to all humans (Worthington, 2005).

Humility also plays a role in the exploration of empathy, as the transgressed individual can see him or herself as someone capable of transgressing others (Worthington, Wade, & Hoyt, 2014). Without this humility, forgiveness may not be pursued, as the transgressed individual may see the perpetrator as an "other" who is not worthy of forgiveness.

A fourth aspect in the process of forgiveness is to adopt an expansive mindset. The right psychological ingredients are needed to make forgiveness possible. Focusing on the positive can lead to better insights, with creative and more flexible thinking (Fredrickson, 2004; Fredrickson, 2011). Negative and positive emotions are both adaptive, and of tremendous importance. Negative emotions may play a critical role in individual survival, while positive emotions free us from negative thinking. Forgiveness leads to more positive emotion, potentially allowing us to become more expansive in our thinking and widening our tolerance and moral compass.

The fifth critical aspect of the forgiveness process is to avoid ruminating. Rumination leads to the perpetuation and worsening of unforgiveness and does not offer benefits for well-being (Nolen-Hoeksema, 2000; Nolen-Hoeksema et al., 2008). Once the transgressed individual decides to forgive, a critical step that strengthens the likelihood of success is to replace the negative ruminative thoughts with positive thoughts. Identifying the pervasive negative thought patterns is important in finding a strategy to break the cycle.

Breaking the cycle of perseverative negative thoughts allows one to potentially experience more positive emotion, and possibly more open-mindedness (Nolen-Hoeksema et al., 2008). Physical reminders or plans to engage in more positive reflection can serve as strategies that can help the transgressed individual break habitual rumination.

The sixth and final aspect is for the transgressed individual to keep forgiving. Forgiveness of a perpetrator with whom we have repeated exposure, for instance, a boss or a relative, is important, as it allows a maintenance of baseline allostasis (the way our brain manages our bodily changes), (Sapolsky, 2004, p. 9). Understanding where anger fits adaptively into one's sense of coherence regarding their life narrative and relationships is useful. Finding a

way to mentally deal with the transgressor is essential for physical health and well-being, along with the maintaining of a job or family peace.

Forgiveness is a complex process that applies to transgressions that range from minor to those that cause extreme emotional or physical trauma. Given this wide set of variables, individuals may be able to explore a forgiveness process independently for more minor transgressions, or require professional support for more extreme transgressions. Social support in either extreme is critical (Green, Decourville, & Sadava, 2012).

In Conclusion

If unforgiveness is harbored and negative emotions are sustained, especially after a transgression or injury, that negative emotion “poisons” ones physical and mental being. Sustaining anger, resentment and vengefulness is similar to the voluntary ingestion of a poison. Forgiveness has become an important part of research in positive psychology, with valuable consequences for both mental and physical well-being (Chaudhary et al., 2014). The concept of forgiveness is often misunderstood, although the experience of transgression is prevalent across the human condition: humans have different beliefs, based on different cultures and differing life experiences, resulting in widely disparate perspectives on the world and our interactions with others. The chance that one will perceive having experienced a transgression is all but inevitable.

Anger, resentment and vengefulness are a resulting factor of a transgression. Forgiveness, as opposed to the unhealthy unforgiveness, can mediate the effects of negative emotions. Forgiveness is a process of holding the transgressor accountable while replacing the negative thoughts, emotions and behaviors one might hold toward the transgressor with more positive, prosocial responses. Feeling empathy and compassion for the transgressor facilitates the

process of forgiveness, and forgiveness results in a net decrease in negative emotions and increase in positive emotions and motivations toward the transgressor.

Our differences, along with the daily frustrations, hurts, and injustices we observe and experience during our lives, can cause us psychological pain and impose deep wounds in our hearts and minds. Forgiveness can serve as a powerful, self-administered salve, and important tool in the positive psychology toolkit that help individuals take adaptive action to increase their well-being, as forgiveness contributes to our physical health, well-being and longevity. Forgiveness might not relieve the pain of the past, but can remove pain from our future.

References

- Barber, L., Maltby, J., & Macaskill, A. (2005). Angry memories and thoughts of revenge: The relationship between forgiveness and anger rumination. *Personality and Individual Differences*, 39, 253-262. <http://dx.doi.org/10.1016/j.paid.2005.01.006>
- Bergland, C. (2015). The brain mechanics of rumination and repetitive thinking: What is the neuroscience behind rumination and repetitive thinking? Retrieved from <https://www.psychologytoday.com/blog/the-athletes-way/201508/the-brain-mechanics-rumination-and-repetitive-thinking>
- Berry, J. W., & Worthington, E. L. (2001). Forgiveness, relationship quality, stress while imagining relationship events, and physical and mental health. *Journal of Counseling Psychology*, 48, 447-455. <http://dx.doi.org/10.1037//0022-0167.48.4.447>
- Biography of Loren Toussaint. (2017). Retrieved from <https://www.luther.edu/touslo01/>
- Bloom, P. (2014, September 10). Against empathy. *Boston Review*.
- Brown, S. L., & Brown, R. M. (2015). Connecting prosocial behavior to improved physical health: Contributions for the neurobiology of parenting. *Neuroscience & Biobehavioral Reviews*, 55, 1-17. <http://dx.doi.org/10.1016/j.neubiorev.2015.04.004>
- Buechner, F. (1993). *Wishful thinking: A seeker's ABC*. San Francisco, CA: HarperCollins.
- Carey, B. (2013, January 13). Susan Nolen-Hoeksema, psychologist who studied depression in women, dies at 53. *The New York Times*. Retrieved from <http://www.nytimes.com/2013/01/14/us/susan-nolen-hoeksema-psychologist-who-studied-depression-in-women-dies-at-53.html>
- Carson, J. W., Keefe, F. J., Goli, V., Fras, A. M., Lynch, T. R., Thorp, S. R., & Buechler, J. L. (2005). Forgiveness and chronic low back pain: A preliminary study examining the

- relationship of forgiveness to pain, anger, and psychological distress. *The Journal of Pain*, 6, 84-91. <https://doi.org/10.1016/j.jpain.2004.10.012>
- Center for Disease Control. (n.d.). <https://www.cdc.gov/heartdisease/facts.htm>
- Chaudhary, H., Chaudhary, J., & Chaudhary, S. (2014). Positive emotions, resilience, gratitude and forgiveness: Role of positive psychology in 21st century. *Indian Journal of Positive Psychology*, 5, 528-530. http://www.iahrw.com/index.php/home/journal_detail/19#list
- Chida, Y., & Steptoe, A. (2009). The association of anger and hostility with future coronary heart disease. *Journal of the American College of Cardiology*, 53, 936-946. <http://dx.doi.org/10.1016/j.jacc.2008.11.044>
- Constitution of WHO. (n.d.). Retrieved from <http://www.who.int/about/mission/en/>
- Coyle, C. T., & Enright, R. D. (1997). Forgiveness intervention with postabortion men. *Journal of Consulting and Clinical Psychology*, 65, 1042-1046.
- Davis, D. E., Ho, M. Y., Griffin, B. J., Bell, C., Hook, J. N., Van Tongeren, D. R., ... Worthington, Jr, E. L. (2015). Forgiving the self and physical and mental health correlates: A meta-analytic review. *Journal of Counseling Psychology*, 62, 329-335. <https://doi.org/10.1037/cou0000063>
- Emerson, Jr., J. G. (1964). *The dynamics of forgiveness*. Philadelphia, PA: Westminster Press.
- Enright, R. D. (2001). Enright forgiveness process model. Retrieved from <https://internationalforgiveness.com/files/EnrightForgivenessProcessModel.pdf>
- Enright, R. D. (2001). *Forgiveness is a choice: A step-by-step process for resolving anger and restoring hope*. Washington, DC: APA Life Tools.
- Everett Worthington. (n.d.). <http://www.evworthington-forgiveness.com/about/>

Forgiveness Phases. (n.d.). Retrieved from

<http://internationalforgiveness.com/files/EnrightForgivenessProcessModel.pdf>

Forgiveness Steps. (n.d.). Retrieved from <http://learningtoforgive.com/9-steps/>

Fredrickson, B. (2009). *Positivity: Top-notch research reveals the 3-to-1 ratio that will change your life*. New York, NY: Three Rivers Press.

Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *Philosophical Transactions: Biological Sciences*, 359, 1367-1377.

<http://dx.doi.org/10.1098/rstb.2004.1512>

Fredrickson, B. L. (2011). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56, 218-226.

<https://doi.org/10.1037/0003-066X.56.3.218>

Fredrickson, B. L., Grewen, K. M., Algoe, S., Firestone, A. M., Arevalo, J. M., Ma, J., & Cole, S. W. (2015). Psychological well-being and the human conserved transcriptional response to adversity. *PLoS One*, 11. <http://dx.doi.org/10.1371/journal.pone.0121839>

Friedberg, J. P., Suchday, S., & Shelov, D. V. (2007). The impact of forgiveness on cardiovascular reactivity and recovery. *International Journal of Psychophysiology*, 65, 87-94. <https://doi.org/10.1016/j.ijpsycho.2007.03.006>

Friedberg, J. P., Suchday, S., & Srinivas, V. S. (2009). Relationship between forgiveness and psychological and physiological indices in cardiac patients. *International Journal of Behavioral Medicine*, 16, 203-211. <https://doi.org/10.1007/s12529-008-9016-2>

Glaser, R., Rabin, B., Chesney, M., Cohen, S., & Natelson, B. (1999). Stress-induced immunomodulation: Implications for infectious disease. *The Journal of the American Medical Association*, 281, 2268-2270.

- Glover, N. G. (2015). *The Five Factor Forgiveness Inventory: A measure of forgiveness from the perspective of the Five Factor Model* (Doctoral dissertation). Retrieved from http://uknowledge.uky.edu/cgi/viewcontent.cgi?article=1076&context=psychology_etds
- Go, A. S., Bauman, M. A., Coleman King, S. M., Fonarow, G. C., Lawrence, W., Williams, K. A., & Sanchez, E. (2014). An effective approach to high blood pressure control: A science advisory from the American Heart Association, the American College of Cardiology, and the Center for Disease Control and Prevention. *Journal of the American College of Cardiology*, 63, 1230-1238. <https://doi.org/10.1016/j.jacc.2013.11.007>
- Greater Good. (2004). https://greatergood.berkeley.edu/article/item/nine_steps_to_forgiveness
- Green, M., Decourville, M., & Sadava, S. (2012). Positive affect, negative affect, stress, and social support as mediators of the forgiveness-health relationship. *Journal of Social Psychology*, 152, 288-307. <https://doi.org/10.1080/00224545.2011.603767>
- Greening, S. G., & Mitchell, D. G. (2015, September 10). A network of amygdala connections predict individual differences in trait anxiety. *Human Brain Mapping*, 36, 4819-4830. <https://doi.org/10.1002/hbm.22952>
- Hamilton, J. P., Farmer, M., Fogleman, P., & Gotlib, I. H. (2015). Depressive rumination, the Default-Mode Network, and the dark matter of clinical neuroscience. *Biological Psychiatry*, 78, 224-230. <http://dx.doi.org/10.1016/j.biopsych.2015.02.020>
- Hannon, P. A., Finkel, E. J., Kumashiro, M., & Rusbult, C. E. (2011). The soothing effects of forgiveness on victims and perpetrators' blood pressure. *Personal Relationships*, 19, 279-289. <https://doi.org/10.1111/j.1475-6811.2011.01356.x>
- Harris, A. H., Luskin, F., Norman, S. B., Standard, S., Brunning, J., Evans, S., & Thorensen, C. E. (2006). Effects of a group forgiveness intervention on forgiveness, perceived stress,

and trait-anger. *Journal of Clinical Psychology*, 62, 715-733.

<https://doi.org/10.1002/jclp.20264>

Harris, A. H., & Thoresen, C. E. (2005). Forgiveness, unforgiveness, health, and disease. In E. L. Worthington, Jr. (Ed.), *Handbook of forgiveness* (pp. 321-333). New York, NY: Routledge.

Heartland Forgiveness Scale. (n.d.). <http://www.heartlandforgiveness.com/>

Hebl, J., & Enright, R. D. (1993). Forgiveness as a psychotherapeutic goal with elderly females. *Psychotherapy: Theory, Research, Practice, Training*, 30, 658-667.

<http://dx.doi.org/10.1037/0033-3204.30.4.658>

Heider, F. (1958). *The psychology of interpersonal relations*. New York, NY: John Wiley & Sons.

Ingersoll-Dayton, B., Campbell, R., & Hwa-Ha, J. (2011). Enhancing forgiveness: A group intervention for the elderly. *Journal of Gerontological Social Work*, 52, 2-16.
<https://doi.org/10.1080/01634370802561901>

International Forgiveness. (n.d.). <https://internationalforgiveness.com/research.htm>

Ironson, G., Balbin, E., Stuetzle, R., Fletcher, M., O'Cleirigh, C., Laureceau, J. P., ... Solomon, G. (2005). Dispositional optimism and the mechanisms by which it predicts slower disease progression in HIV: proactive behavior, avoidant coping, and depression. *International Journal of Behavioral Medicine*, 12, 86-97.
http://dx.doi.org/10.1207/s15327558ijbm1202_6

Ironson, G., Stuetzle, R., Ironson, D., Balbin, E., Kremer, H., George, A., ... Fletcher, M. A. (2011). View of God as benevolent and forgiving or punishing and judgement predicts

- HIV disease progression. *Journal of Behavioral Medicine*, 34, 414-425.
- <http://dx.doi.org/10.1007/s10865-011-9314-z>
- IZQuotes. (n.d.). <http://izquotes.com/quote/130380>
- Johnson, D. P. (2015). *A twin study examining the development of rumination and its role as a transdiagnostic risk factor for psychopathology* (Doctoral dissertation). Retrieved from http://scholar.colorado.edu/cgi/viewcontent.cgi?article=1082&context=psyc_gradetds
- Keefe, F. J., Lumley, M., Anderson, T., Lynch, T., & Carson, K. (2001). Pain and emotion: New research directions. *Journal of Clinical Psychology*, 57, 587-607.
- <https://doi.org/10.1002/jclp.1030>
- Kern, P. (2017). Positive psychology: What it is, and how you can use it for yourself. Retrieved from <http://theconversation.com/explainer-what-is-positive-psychology-and-how-can-you-use-it-for-yourself-75635>
- Kilpatrick, D. G., Resnick, H. S., Milanak, M. E., Miller, M. W., Keyes, K. M., & Friedman, M. J. (2013). National estimates of exposure to traumatic events and PTSD prevalence using DSM-IV and DSM5 criteria. *Journal of Trauma and Stress*, 26, 537-547.
- <http://dx.doi.org/10.1002/jts.21848>
- Konstad, D. (2010). *Before forgiveness: The origins of a moral idea*. Cambridge, MA: Cambridge University Press.
- Law, M. K. (2009). *Assessing forgiveness: Development of a brief, broadly applicable self-report measure* (Doctoral dissertation, Virginia Polytechnic Institute and State University). Retrieved from [https://theses.lib.vt.edu/theses/available/etd-05142009-150813/unrestricted/Thesis_Complete_1_2\[1\].pdf](https://theses.lib.vt.edu/theses/available/etd-05142009-150813/unrestricted/Thesis_Complete_1_2[1].pdf)

- Lawler, K. A., Younger, J. W., Piferi, R. L., Billington, E., Jobe, R., Edmondson, K., & Jones, W. H. (2003). A change of heart: Cardiovascular correlates of forgiveness in response to interpersonal conflict. *Journal of Behavioral Medicine*, 26, 373-393.
<http://dx.doi.org/10.1023/A:1025771716686>
- Lawler, K. A., Younger, J. W., Piferi, R. L., Jobe, R. L., Edmondson, K. A., & Jones, W. H. (2005). The unique effects of forgiveness on health: An exploration of pathways. *Journal of Behavioral Medicine*, 28, 157-167. <http://dx.doi.org/10.1007/s10865-005-3665-2>
- Lee, Y., & Enright, R. D. (2014). A forgiveness intervention for women with fibromyalgia who were abused in childhood: A pilot study. *Spirituality in Clinical Practice*, 3, 203-217.
<https://doi.org/10.1037/scp0000025>
- Linton, S. J., Nicholas, M. K., MacDonald, S., Boersma, K., Bergbom, S., Maher, C., & Refshauge, K. (2011). The role of depression and catastrophizing in musculoskeletal pain. *European Journal of Pain*, 15, 416-422.
<https://doi.org/10.1016/j.ejpain.2010.08.009>
- Luskin, F. (2002). *Forgive for Good: A proven prescription for health and happiness*. New York, NY: HarperCollins.
- Lyubomirsky, S. (2008). *The how of happiness: A scientific approach to getting the life you want*. New York, NY: Penguin Press.
- Lyubomirsky, S., & Lepper, H. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, 46, 137-155. Retrieved from <https://link.springer.com/article/10.1023/A:1006824100041>
- Maltby, J., Macaskill, A., & Day, L. (2001). Failure to forgive self and others: A replication and extension of the relationship between forgiveness, personality, social desirability and

general health. *Personality and Individual Differences*, 30, 881-885.

[http://dx.doi.org/10.1016/S0191-8869\(00\)00080-5](http://dx.doi.org/10.1016/S0191-8869(00)00080-5)

Martin, L. A., Vosvick, M., & Riggs, S. A. (2012). Attachment, forgiveness, and physical health quality of life in HIV+ adults. *AIDS Care*, 24, 1333-1340.

<http://dx.doi.org/10.100/09540121.2011.648598>

May, R. W., Sanchez-Gonzalez, M. A., Hawkins, K. A., Batchelor, W. B., & Fincham, F. D. (2014). Effect of anger and trait forgiveness on cardiovascular risk in young adult females. *The American Journal of Cardiology*, 114, 47-52.

<http://dx.doi.org/10.1016/j.amjcard.2014.04.007>

McCullough, M. E., Orsulak, P., Brandon, A., & Akers, L. (2007). Rumination, fear, and cortisol: An in vivo study of interpersonal transgressions. *Health Psychology*, 26, 126-132. <https://doi.org/10.1037/0278-6133.26.1.126>

McCullough, M. E., Pargament, K. I., & Thoresen, C. E. (2000). *Forgiveness: Theory, research, and practice*. New York, NY: The Guilford Press.

McCullough, M. E., Root, L. M., Tabak, E. A., & Van Oyen Witvliet, C. (2011). Forgiveness. In S. J. Lopez & C. R. Snyder (Eds.), *The Oxford handbook of positive psychology* (2nd ed. (pp. 427-435). New York, NY: Oxford University Press.

McCullough, M. E., & Van Oyen Witvliet, C. (2002). The psychology of forgiveness. In S. J. Lopez & C. R. Snyder (Eds.), *The Oxford handbook of positive psychology* (1st ed. (pp. 446-458). New York, NY: Oxford Press.

McMahon, D. M. (2013). The pursuit of happiness in history. In S. A. David, I. Boniwell, & A. C. Ayers (Eds.), *The Oxford handbook of happiness* (pp. 252-262). Oxford, United Kingdom: Oxford University Press.

- McNulty, J. K. (2011). The dark side of forgiveness: The tendency to forgive predicts continued psychological and physical aggression in marriage. *Personality and Social Psychology Bulletin*, 37, 770-783. <https://doi.org/10.1177/0146167211407077>
- Melzack, R. (2005). The McGill pain questionnaire: From description to measurement. *The Journal of the American Society of Anesthesiologists*, 103, 199-202.
- Musekura, C. (2010). *An assessment of contemporary models of forgiveness*. New York, NY: Peter Lang.
- Nelson-Coffey, S. K., Fritz, M. M., Lyubomirsky, S., & Cole, S. W. (2017). Kindness in the blood: A randomized controlled trial of the gene regulatory impact of prosocial behavior. *Psychoneuroendocrinology*, 81, 8-13. <http://dx.doi.org/10.1016/j.psyneuen.2017.03.025>
- Nolen-Hoeksema, S. (2000). The role of rumination in depressive disorders and mixed anxiety/depressive symptoms. *Journal of Abnormal Psychology*, 109, 504-511. <http://dx.doi.org/10.1037//0021-843X.109.3.504>
- Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science*, 3, 400-424. <http://dx.doi.org/10.1111/j.1745-6924.2008.00088.x>
- Nussbaum, M. C. (2016). *Anger and forgiveness: Resentment, generosity, justice*. New York, NY: Oxford University Press.
- Offenbacher, M., Dezutter, J., Vallejo, M. A., & Toussaint, L. L. (2015). The role of forgiveness in chronic pain and fibromyalgia. In L. L. Toussaint, E. L. Worthington, Jr, & D. R. Williams (Eds.), *Forgiveness and health: Scientific evidence and theories relating forgiveness to better health* (pp. 123-138). New York, NY: Springer Science.

- O'Kelly, M. E., & Collard, J. J. (2015). Rational emotive behavior therapy. In C. M. Nezu & A. M. Nezu (Eds.), *Oxford handbooks online* (pp. 1-36).
<http://dx.doi.org/10.1093/oxfordhb/9780199733255.013.28>
- Park, N., Peterson, C., Szvarca, D., Vander Molen, R. J., Kim, E. S., & Collon, K. (2014). Positive psychology and physical health: Research and applications. *American Journal of Lifestyle Medicine*. <http://dx.doi.org/10.1177/155982761455027>
- Pawelski, J. O. (2003). William James, positive psychology, and healthy-mindedness. *The Journal of Speculative Philosophy*, 17, 53-67. <https://doi.org/10.1353/jsp.2003.0025>
- Peterson, C., & Seligman, M. E. (2004). *Character strengths and virtues: A handbook and classification*. New York, NY: Oxford University Press.
- Pietrini, P., Guazzelli, M., Basso, G., Jaffe, K., & Grafman, J. (2000). Neural correlates of imaginal aggressive behavior assessed by positron emission tomography in healthy subjects. *American Journal of Psychiatry*, 157, 1772-1781.
<https://doi.org/10.1176/appi.ajp.157.11.1772>
- Porges, S. W. (1995). Cardiac vagal tone: A physiological index of stress. *Neuroscience & Behavioral Reviews*, 19, 225-233. [https://doi.org/10.1016/0149-7634\(94\)00066-A](https://doi.org/10.1016/0149-7634(94)00066-A)
- Rangel, S. (2011). Sammy Rangel. Retrieved from
<http://theforgivenessproject.com/stories/sammy-rangel-usa/>
- Rangel, S. [Tedx Danubia]. (n.d.). *The Power of Forgiveness* [Video file]. Retrieved from
<https://www.youtube.com/watch?v=iOzJO6HRIuA>
- Reed, G. L., & Enright, R. D. (2006). The effects of forgiveness therapy on depression, anxiety, and post traumatic stress for women after spousal emotional abuse. *Journal of Consulting and Clinical Psychology*, 74, 920-929. <https://doi.org/10.1037/0022-006X.74.5.920>

- Reivich, K., & Shatte, A. (2002). *The resilience factor: 7 keys to finding your inner strength and overcoming life's hurdles*. New York, NY: Broadway Books.
- Sapolsky, R. M. (2004). The physiology and pathophysiology of unhappiness. In E. L. Worthington Jr. (Ed.), *Handbook of forgiveness* (pp. 273-303). New York, NY: Taylor & Francis Group.
- Sapolsky, R. M. (2004). *Why zebras don't get ulcers* (3rd ed.). New York, NY: Henry Holt.
- Sapolsky, R. M. (2017). *Behave: The biology of humans at our best and worst*. New York, NY: Penguin Press.
- Schumann, K., & Ross, M. (2010). The benefits, costs, and paradox of revenge. *Social and Personality Psychology Compass*, 1193-1205. <https://doi.org/10.1111/j.1751-9004.2010.00322.x>
- Seligman, M. E. (2011). *Flourish*. New York, NY: Simon & Schuster.
- Seligman, M. E., & Csikszentmihalyi, M. (2000). Positive psychology. *American Psychologist*, 55, 5-14. <http://dx.doi.org/10.1037/0003-066X.55.1.5>
- Siegel, R. D. (2014). Positive Psychology: Harnessing the power of happiness, mindfulness, and inner strength. Retrieved from <http://www.health.harvard.edu/mind-and-mood/positive-psychology-harnessing-the-power-of-happiness-mindfulness-and-inner-strength>
- Silton, N. R., Flannelly, K. J., & Lutjen, L. J. (2013). It pays to forgive! Aging, forgiveness, hostility, and health. *Journal of Adult Development*, 20, 222-231. <http://dx.doi.org/10.1007/s10804-013-9173-7>
- Smith, J. M. (2009). A roadmap to rumination: A review of the definition, assessment, and conceptualization of this multifaceted construct. *Clinical Psychology Review*, 29, 116-128. <http://dx.doi.org/10.1016/j.cpr.2008.10.003>

Stress in America. (n.d.). <http://www.apa.org/news/press/releases/stress/index.aspx>

Sudak, D. M. (2012). Cognitive behavioral therapy for depression. *Psychiatric Clinics*, 35, 99-110. <https://doi.org/10.1016/j.psc.2011.10.001>

Temoshok, L. R., & Wald, R. L. (2005). Forgiveness and health in persons living with HIV/AIDS. In E. L. Worthington, Jr (Ed.), *Handbook of forgiveness* (pp. 335-348). New York, NY: Routledge.

The Pursuit of Happiness. (n.d.). [http://www.pursuit-of-happiness.org/history-of-happiness/william-james/Toussaint, L. L., Owen, A. D., & Cheadle, A. \(2012\). Forgive to live: Forgiveness, health, and longevity. *Journal of Behavior Medicine*, 35, 375-386. <http://dx.doi.org/10.1007/s10865-011-9362-4>](http://www.pursuit-of-happiness.org/history-of-happiness/william-james/Toussaint, L. L., Owen, A. D., & Cheadle, A. (2012). Forgive to live: Forgiveness, health, and longevity. Journal of Behavior Medicine, 35, 375-386. http://dx.doi.org/10.1007/s10865-011-9362-4)

Toussaint, L. L., Owen, A. D., & Cheadle, A. (2012). Forgive to live: Forgiveness, health, and longevity. *Journal of Behavior Medicine*, 35, 375-386. <http://dx.doi.org/10.1007/s10865-011-9362-4>

Toussaint, L. L., Shields, G. S., Dorn, G., & Slavich, G. M. (2016). Effects of lifetime stress exposure on mental and physical health in young adulthood: How stress degrades and forgiveness protects health. *Journal of Health Psychology*, 21, 1004-1014. <https://doi.org/10.1177/1359>

Toussaint, L. L., Shields, G. S., & Slavich, G. M. (2016). Forgiveness, stress, and health: A 5-week dynamic parallel process study. *Annals of Behavioral Medicine*, 50, 727-735. <https://doi.org/10.1007/s12160-016-9796-6>

Toussaint, L. L., Vincent, A., McAllister, S. J., Oh, T. H., & Hassett, A. L. (2014). A comparison of fibromyalgia symptoms in patients with health versus depressive, low and reactive

- affect balance styles. *Scandinavian Journal of Pain*, 5, 161-166.
<http://dx.doi.org/http://dx.doi.org/10.1016/j.sjpain.2014.05.001>
- Toussaint, L. L., Williams, D. R., Musick, M. A., & Everson, S. A. (2001). Forgiveness and health: Age differences in a U.S. probability sample. *Journal of Adult Development*, 8, 249-257. <http://dx.doi.org/>
- Waltman, M. A., Rusell, D. C., Coyle, C. T., Enright, R. D., Holter, A. C., & Swoboda, C. M. (2008). The effects of a forgiveness intervention on patients with coronary artery disease. *Psychology & Health*, 24, 11-27. <http://dx.doi.org/10.1080/08870440801975127>
- Webster Marketon, J. I., & Glaser, R. (2008). Stress hormones and immune function. *Cellular Immunology*, 252, 16-26. <http://dx.doi.org/10.1016/j.cellimm.2007.09.006>
- Witliet, C. V., Ludwig, T. E., & Vander Laan, K. L. (2001). Granting forgiveness or harboring grudges: Implications for emotion, physiology, and health. *Psychological Science*, 12, 117-122. <http://dx.doi.org/10.1111/1467-9280.00320>
- Worthington, Jr, E. L. (2005). Initial questions about the art and science of forgiving. In E. L. Worthington (Ed.), *Handbook of forgiveness*, pp. 1-13). New York, NY: Taylor & Francis Group.
- Worthington, Jr, E. L. (2013). *Moving forward: Six steps to forgiving yourself and breaking free from the past*. Colorado Springs, CO: WaterBrook Press.
- Worthington, Jr, E. L., & Scherer, M. (2004). Forgiveness is an emotion-focused coping strategy that can reduce health risk and promote health resilience: Theory, review and hypotheses. *Psychology and Health*, 19, 385-405.
<https://doi.org/10.1080/0887044042000196674>

Worthington, Jr, E. L., Wade, N. G., & Hoyt, W. T. (2014). Positive psychological interventions for promoting forgiveness. In A. C. Parks & S. M. Schueller (Eds.), *The Wiley Blackwell handbook of positive psychological interventions* (pp. 20-41). Malden, MA: John Wiley & Sons.

Appendix A*Subjective Happiness Scale (SHS)*

For each of the following statements and/or questions, please circle the point on the scale that you feel is most appropriate in describing you.

1. In general, I consider myself:

| | | | | | | |
|--------------|---|---|---|--------------|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| not a very | | | | a very | | |
| happy person | | | | happy person | | |

2. Compared with most of my peers, I consider myself:

| | | | | | | |
|------------|---|---|---|------------|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Less happy | | | | more happy | | |

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

| | | | | | | |
|--------|---|---|---|---------|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| not at | | | | a great | | |
| all | | | | deal | | |

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

| | | | | | | |
|--------------|---|---|---|------------|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| A great deal | | | | not at all | | |

How To Calculate Your Score:

STEP 1 Total = Item 1 ____ + Item 2: ____ + Item 3: ____ + Item 4: ____
= ____

STEP 2: Happiness score = ____ divided by 4 = ____

(Lyubomirsky & Lepper, 1999)

Appendix B

Enright Forgiveness Process Model (Enright, 2001)

PRELIMINARIES

Who hurt you?

How deeply were you hurt?

On what specific incident will you focus?

What were the circumstances at the time? Was it morning or afternoon? Cloudy or sunny?

What was said? How did you respond?

PHASE I—UNCOVERING YOUR ANGER

How have you avoided dealing with anger?

Have you faced your anger?

Are you afraid to expose your shame or guilt?

Has your anger affected your health?

Have you been obsessed about the injury or the offender?

Do you compare your situation with that of the offender?

Has the injury caused a permanent change in your life?

Has the injury changed your worldview?

PHASE 2—DECIDING TO FORGIVE

Decide that what you have been doing hasn't worked.

Be willing to begin the forgiveness process.

Decide to forgive.

PHASE 3—WORKING ON FORGIVENESS

Work toward understanding.

Work toward compassion.

Accept the pain.

Give the offender a gift.

PHASE 4—DISCOVERY AND RELEASE FROM EMOTIONAL PRISON

Discover the meaning of suffering.

Discover your need for forgiveness.

Discover that you are not alone.

Discover the purpose of your life.

Discover the freedom of forgiveness.

(Enright, 2001)

Appendix C

HFS

Directions: In the course of our lives negative things may occur because of our own actions, the actions of others, or circumstances beyond our control. For some time after these events, we may have negative thoughts or feelings about ourselves, others, or the situation. Think about how you typically respond to such negative events. Next to each of the following items write the number (from the 7-point scale below) that best describes how you typically respond to the type of negative situation described. There are no right or wrong answers. Please be as open as possible in your answers.

- | | | | | | | |
|------------------------------|---|---------------------------|---|--------------------------|---|-----------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Almost Always False of Me | | More Often False of Me | | More Often True of Me | | Almost always True of Me |
- ____ 1. Although I feel badly at first when I mess up, over time I can give myself some slack.
 - ____ 2. I hold grudges against myself for negative things I've done.
 - ____ 3. Learning from bad things that I've done helps me get over them.
 - ____ 4. It is really hard for me to accept myself once I've messed up.
 - ____ 5. With time I am understanding of myself for mistakes I've made.
 - ____ 6. I don't stop criticizing myself for negative things I've felt, thought, said, or done.
 - ____ 7. I continue to punish a person who has done something that I think is wrong.
 - ____ 8. With time I am understanding of others for the mistakes they've made.
 - ____ 9. I continue to be hard on others who have hurt me.
 - ____ 10. Although others have hurt me in the past, I have eventually been able to see them as good people.
 - ____ 11. If others mistreat me, I continue to think badly of them.
 - ____ 12. When someone disappoints me, I can eventually move past it.
 - ____ 13. When things go wrong for reasons that can't be controlled, I get stuck in negative thoughts about it.
 - ____ 14. With time I can be understanding of bad circumstances in my life.
 - ____ 15. If I am disappointed by uncontrollable circumstances in my life, I continue to think negatively about them.
 - ____ 16. I eventually make peace with bad situations in my life.
 - ____ 17. It's really hard for me to accept negative situations that aren't anybody's fault.
 - ____ 18. Eventually I let go of negative thoughts about bad circumstances that are beyond anyone's control.

HFS Scoring Instructions

Four scores are calculated for the Heartland Forgiveness Scale (HFS):

Total HFS (items 1-18) HFS Forgiveness of Self subscale (items 1-6) HFS Forgiveness of Others subscale (items 7-12) HFS Forgiveness of Situations subscale (items 13-18)

To score the HFS:

1. Scores for items 1, 3, 5, 8, 10, 12, 14, 16, & 18 are the same as the answer written by the person taking the HFS. Scores for items 2, 4, 6, 7, 9, 11, 13, 15, and 17 are reversed. For example, an answer of 1 is given a score of 7 and an answer of 7 is given a score of 1. Refer to the tables below for more information about scoring individual items.

2. To calculate the Total HFS, HFS Forgiveness of Self, HFS Forgiveness of Others, and HFS Forgiveness of Situations, sum the values for the items that compose each scale or subscale (with appropriate items being reverse scored). Scores for the Total HFS can range from 18 to 126. Scores for each of the three HFS subscales can range from 6 to 42.

Scoring Items 1, 3, 5, 8, 10, 12, 14, 16, & 18

Person's

Answer Item Score 1 1 2 2 3 3 4 4 5 5 6 6 7 7

Reverse-Scoring Items 2, 4, 6, 7, 9, 11, 13, 15, & 17

Person's

Answer Item Score 1 7 2 6 3 5 4 4 5 3 6 2 7 1

Interpreting HFS Scores

The Heartland Forgiveness Scale (HFS) is an 18-item, self-report questionnaire designed to assess a person's dispositional forgiveness (i.e., one's general tendency to be forgiving), rather than forgiveness of a particular event or person. The HFS consists of items that reflect a person's tendency to forgive him or herself, other people, and situations that are beyond anyone's control (e.g., a natural disaster).

Four scores are calculated for the HFS. There is a score for the Total HFS and a score for each of the three HFS subscales (HFS Forgiveness of Self subscale, HFS Forgiveness of Others subscale, and HFS Forgiveness of Situations). Scores for the Total HFS can range from 18 to 126. Scores for the three HFS subscales can range from 6 to 42.

Total HFS One's score on the Total HFS indicates how forgiving a person tends to be of oneself, other people, and uncontrollable situations. Higher scores indicate higher levels of forgiveness, and lower scores indicate lower levels of forgiveness.

- A score of 18 to 54 on the Total HFS indicates that one is usually unforgiving of oneself, others, and uncontrollable situations.
- A score of 55 to 89 on the Total HFS indicates that one is about as likely to forgive, as one is not to forgive oneself, others, and uncontrollable situations.
- A score of 90 to 126 on the Total HFS indicates that one is usually forgiving of oneself, others, and uncontrollable situations.

HFS Subscales One's score on the three HFS subscales indicate how forgiving a person tends to be of oneself (HFS Forgiveness of Self), other people (HFS Forgiveness of Others), or situations beyond anyone's control (HFS Forgiveness of Situations). Higher scores indicate higher levels of forgiveness, and lower scores indicating lower levels of forgiveness.

- A score of 6 to 18 on HFS Forgiveness of Self, HFS Forgiveness of Others, or HFS Forgiveness of Situations indicates that one is usually unforgiving of oneself, other people, or uncontrollable situations, respectively.
- A score of 19 to 29 indicates that one is about as likely to forgive as to not forgive oneself, other people, or uncontrollable situations, respectively.
- A score of 30 to 42 indicates that one is usually forgiving of oneself, other people, or uncontrollable situations, respectively.

(Heartland Forgiveness Scale, n.d.)

APPENDIX D

MCGILL PAIN QUESTIONNAIRE

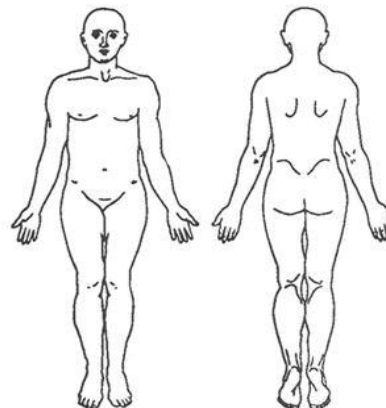
RONALD MELZACK

Patient's Name _____ Date _____ Time _____ am/pm

 PRI: S _____ A _____ E _____ M _____ PRI(T) _____ PPI _____
 (1-10) (11-15) (16) (17-20) (1-20)

| | |
|--------------|-----------------|
| 1 FLICKERING | 11 TIRING |
| QUIVERING | EXHAUSTING |
| PULSING | 12 SICKENING |
| THROBBING | SUFFOCATING |
| BEATING | 13 FEARFUL |
| POUNDING | FRIGHTFUL |
| 2 JUMPING | TERRIFYING |
| FLASHING | 14 PUNISHING |
| SHOOTING | GRUELLING |
| 3 PRICKING | CRUEL |
| BORING | VICIOUS |
| DRILLING | KILLING |
| STABBING | 15 WRETCHED |
| LANCINATING | BLINDING |
| 4 SHARP | 16 ANNOYING |
| CUTTING | TROUBLESOME |
| LACERATING | MISERABLE |
| 5 PINCHING | INTENSE |
| PRESSING | UNBEARABLE |
| GNAWING | 17 SPREADING |
| CRAMPING | RADIATING |
| CRUSHING | PENETRATING |
| 6 TUGGING | PIERCING |
| PULLING | 18 TIGHT |
| WRENCHING | NUMB |
| 7 HOT | DRAWING |
| BURNING | SQUEEZING |
| SCALDING | TEARING |
| SEARING | 19 COOL |
| 8 TINGLING | COLD |
| ITCHY | FREEZING |
| SMARTING | 20 NAGGING |
| STINGING | NAUSEATING |
| 9 DULL | AGONIZING |
| SORE | DREADFUL |
| HURTING | TORTURING |
| ACHING | PPI |
| HEAVY | 0 NO PAIN |
| 10 TENDER | 1 MILD |
| TAUT | 2 DISCOMFORTING |
| RASPING | 3 DISTRESSING |
| SPLITTING | 4 HORRIBLE |
| | 5 EXCRUCIATING |

| | | |
|-----------|--------------|------------|
| BRIEF | RHYTHMIC | CONTINUOUS |
| MOMENTARY | PERIODIC | STEADY |
| TRANSIENT | INTERMITTENT | CONSTANT |



E = EXTERNAL
I = INTERNAL

COMMENTS:

© R. MELZACK, 1975

(Melzack, 2005)

Appendix E

Forgiveness Self-Efficacy Scale

Using the scale below, please indicate how confident you are that you can complete the following tasks. A score of 100% confidence indicates that you are completely confident that you can complete the task (e.g., 100% confidence that you can brush your teeth). A score of 0% confidence indicates that you do not believe you can accomplish the task at all (e.g., 0% confidence you can jump 10 feet in the air). Please answer the following questions regarding the interpersonal offense that brought you into this study.

Confidence Rating

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

No confidence Moderate Confidence Complete confidence

At this moment, how confident are you that:

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. I can think about the offender without feeling hurt and/or angry. 2. I hold myself accountable for the hurt and/or angry feelings that arise when I think about the interpersonal offense. 3. I can think of the offender with compassionate understanding. 4. I can think about the offender and remain calm and peaceful. 5. I can think about the interpersonal hurt without blaming the offender for what happened. 6. I can think about the offender and understand why they acted as they did. 7. I can forgive the offender. 8. I can think about what the offender did without thinking that it was directed at me personally. 9. I can go an entire day without feeling angry at the offender. 10. I can go an entire week without feeling hurt by the offender. 11. When I experience hurt and/or angry feelings toward the offender I use techniques that successfully sooth my distress. | |
|---|--|

12.I can take responsibility for the angry thoughts that arise toward the offender.

13.I can go an entire day without hurt by the offender.

14.I can go an entire week without feeling angry at the offender.

(Harris et al., 2006)

Appendix F
Nine Steps to Forgiveness

1. Know exactly how you feel about what happened and be able to articulate what about the situation is not OK. Then, tell a couple of trusted people about your experience.
2. Make a commitment to yourself to feel better. Forgiveness is for you and no one else.
3. Forgiveness does not necessarily mean reconciling with the person who upset you or condoning the action. In forgiveness you seek the peace and understanding that come from blaming people less after they offend you and taking those offenses less personally.
4. Get the right perspective on what is happening. Recognize that your primary distress is coming from the hurt feelings, thoughts, and physical upset you are suffering now, not from what offended you or hurt you two minutes—or 10 years— ago.
5. At the moment you feel upset, practice stress management to soothe your body's fight or flight response.
6. Give up expecting things from your life or from other people that they do not choose to give you. Remind yourself that you can hope for health, love, friendship, and prosperity, and work hard to get them. However, these are "unenforceable rules:" You will suffer when you demand that these things occur, since you do not have the power to make them happen.
7. Put your energy into looking for another way to get your positive goals met than through the experience that has hurt you.
8. Remember that a life well lived is your best revenge. Instead of focusing on your wounded feelings, and thereby giving power over you to the person who caused you pain, learn to look for the love, beauty, and kindness around you. Put more energy into appreciating what you have rather than attending to what you do not have.
9. Amend the way you look at your past so you remind yourself of your heroic choice to forgive.
(Greater Good, 2004)